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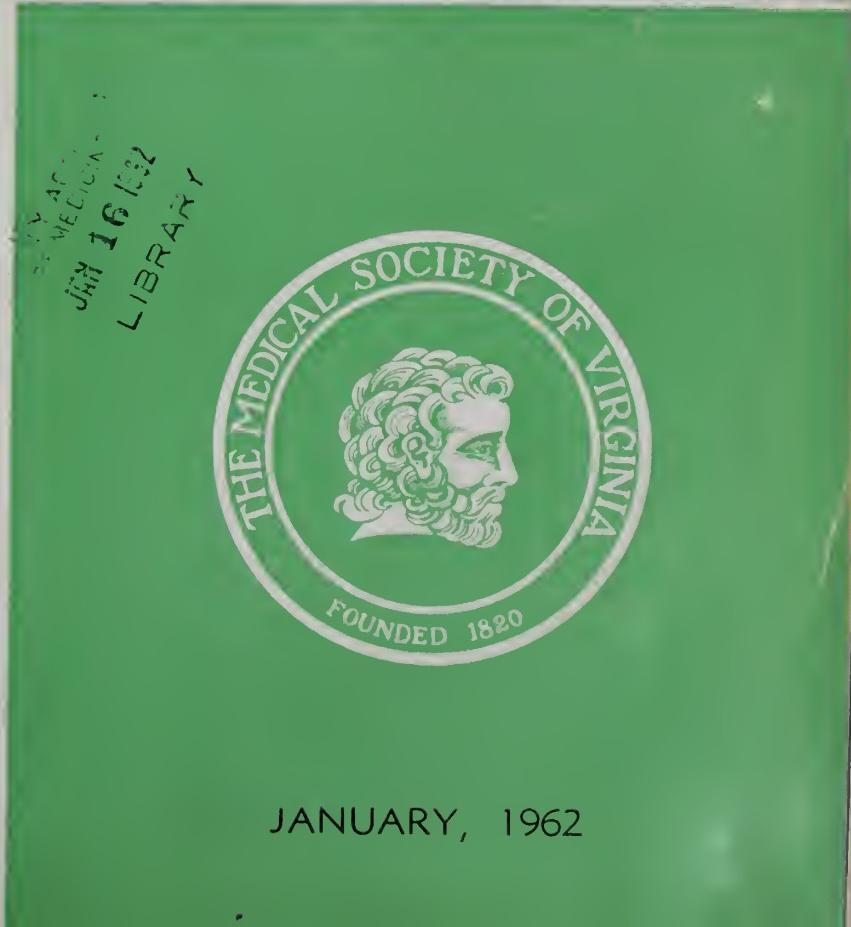




# VIRGINIA

# MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA



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**References:** (1) Malone, F. J., Jr.: *Mil. Med.* 125:836, 1960. (2) Martin, W. J.; Nichols, D. R., & Cook, E. N.: *Proc. Staff Meet. Mayo Clin.* 34:187, 1959. (3) Ullman, A.: *Delaware M. J.* 32:97, 1960. (4) Petersdorf, R. G.; Hook, E. W.; Curtin, J. A., & Grossberg, S. E.: *Bull. Johns Hopkins Hosp.* 108:48, 1961. (5) Jolliff, C. R.; Engelhard, W. E.; Ohlsen, J. R.; Heidrick, P. J., & Cain, J. A.: *Antibiotics & Chemother.* 10: 694, 1960. (6) Lind, H. E.: *Am. J. Proctol.* 11:392, 1960.

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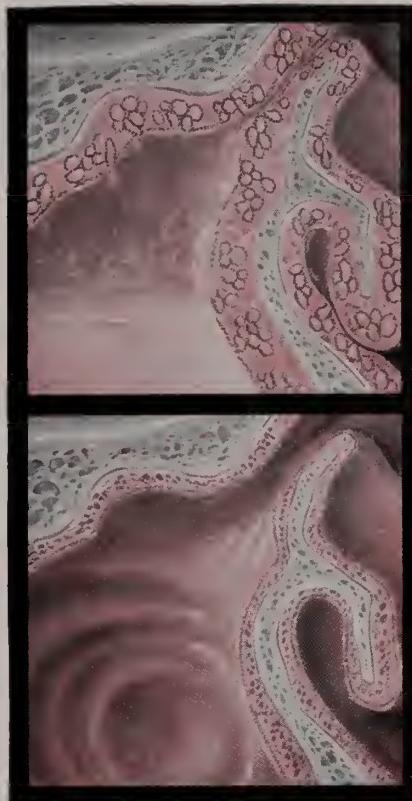
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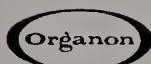
When the question is digestion because of your patient's inability to handle fat, starch, protein or cellulose, you can provide dependable relief with COTAZYM-B, which contains the essential pancreatic enzymes lipase, trypsin and amylase, plus bile salts and cellulase. A daily dose of 6 COTAZYM-B tablets is sufficient to emulsify and digest 50 Gm. of dietary fat, and to digest all of the protein and starch in a typical diet (100 Gm. protein, 250 Gm. starch) and 480 mg. cellulose.

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*Supply:* Bottles of 48 tablets.

*Write for samples and comprehensive literature.*

NEW **Cotazym<sup>®</sup>-B**  
Lipancreatin Bile Salts Cellulase  
ORGANON INC., West Orange, New Jersey



\*The Significance of Lipancreatin (Pancreatic Enzymes Concentrated 'Organon')

A product of original Organon research, lipancreatin provides for the first time in digestant preparations a known, constant amount of fat-digesting lipase in addition to trypsin and amylase. It surpasses in assayable digestive activity all presently available pancreatin preparations.

# How to help your patient stick to a geriatric diet

The secret ingredient in a successful diet is acceptance. Meat is as important for the old as for the young—and every bit as appealing. Chops, fish steaks, chicken parts or cutlets can be bought in small portions. Chopped or strained vegetables not only supply the patient on a geriatric diet with needed vitamins, but are easy to chew. The same is true of easy-to-make, one-dish casseroles. Patients of advanced years enjoy salads because they need no cooking, and canned fruits are an extra convenience for the elderly. Fluid intake should be liberal, of course.



*A glass of beer  
can add zest to a  
patient's diet*

Sodium 17 mg.  
calories 104/8 oz. glass  
(Average of American Beers)



*Delicious dishes like these can help the aged enjoy a better balanced diet.*

United States Brewers Association, Inc.

For reprints of this and 11 other diet menus, write us at 535 Fifth Avenue, N.Y. 17, N.Y.



# Terramycin®

BRAND OF OXYTETRACYCLINE

Continuing to grow in clinical stature



## Continuing to grow in clinical stature

Recent medical literature<sup>1-27</sup>—adding to an already massive bibliography—continues to document the effectiveness of well-tolerated Terramycin in pediatric, respiratory, and other infections.

**Recent bibliography:** 1. A.M.A. Council on Drugs, New and Nonofficial Drugs 1961, Philadelphia, Lippincott, 1961, pp. 142-147. 2. Beckman, H.: The Year Book of Drug Therapy, Chicago, Yr. Bk. Pub., 1961, p. 271. 3. Eastman, N. J., and Hellman, L. M.: Williams Obstetrics, ed. 12, New York, Appleton-Century-Crofts, 1961, pp. 845-1035. 4. Keefer, C. S., in Modell, W.: Drugs of Choice 1960-1961, St. Louis, Mosby, 1960, pp. 141, 146, 147. 5. Huang, N. N.: J. Pediat. 59:512, 1961. 6. Smith, R. C. F.: Brit. J. Clin. Practice 15:345, 1961. 7. Asay, L. D., and Koch, R.: New England J. Med. 262:1062, 1960. 8. Berry, D. G., et al.: Lancet 1:137, 1960. 9. Osol, A., et al.: The Dispensatory of the United States of America, ed. 25, Philadelphia, Lippincott, 1960, pp. 953, 1556. 10. Adams, A. R. D.: Brit. M. J. 1:1639, 1960. 11. Jung, R. C., and Carrera, G. M.: Dis. Colon & Rectum 3:313, 1960. 12. De Lamater, J. N.: Am. J. Gastroenterol. 34:130, 1960. 13. Stewart, W. H., et al., in Kelley, V. C.: Brenneman-McQuarrie-Kelley Practice of Pediatrics, Maryland, Prior, 1960, vol. II, chap. 5, p. 19. 14. Wellman, W. E., and Herrell, W. E., in Kelley, V. C.: Brenneman-McQuarrie-Kelley Practice of Pediatrics, Maryland, Prior, 1960, vol. I, chap. 44, p. 13. 15. Wenckert, A., and Robertson, B.: Acta chir. Scandinav. 120:79, 1960. 16. Alstead, S.: Dilling's Clinical Pharmacology, ed. 20, London, Cassell, 1960, p. 462. 17. Grover, F. W.: Texas J. Med. 57:355, 1961. 18. Gardiner, W. P., and Gomila, R. R., Jr.: Scientific Exhibit, Venereal Disease Seminar, U.S. Public Health Service, Feb. 28-Mar. 3, 1961. 19. Jacques, A. A., and Fuchs, V. H.: J. Louisiana M. Soc. 113:200, 1961. 20. Nathan, L. A.: Scientific Exhibit, 15th Clinical Meet., A.M.A., Denver, Col., Nov. 26-30, 1961. 21. Ullman, A.: Delaware M. J. 32:97, 1960. 22. Lamphier, T. A.: Scientific Exhibit, New York State M. Soc. Meet., New York, May 7-13, 1960. 23. Freier, A.: Paper presented at Michigan Soc. Obst. & Gynec., Detroit, May 3, 1961. 24. Logan, K. M.: Scientific Exhibit, Ann. Meet., Ohio Acad. Gen. Practice, Cincinnati, Sept. 13-14, 1961. 25. Altemeier, W. A., and Wulsin, J. H. (A.M.A. Council on Drugs Report): J.A.M.A. 173:527, 1960. 26. Krol, W. J.: J. Abdom. Surg. 3:78, 1961. 27. Potempa, J.: Med. Klin. 56:352, 1961.

### In Brief

The dependability of Terramycin in daily practice is based on its broad range of antimicrobial effectiveness, excellent toleration, and low order of toxicity. As with other broad-spectrum antibiotics, overgrowth of nonsusceptible organisms may develop. If this occurs, discontinue the medication and institute appropriate specific therapy as indicated by susceptibility testing. Glossitis and allergic reactions to Terramycin are rare. Aluminum hydroxide gel may decrease antibiotic absorption and is contraindicated. For complete dosage, administration, and precaution information, read package insert before using.

More detailed professional information available on request.

# Terramycin®

OXYTETRACYCLINE WITH GLUCOSAMINE

PEDIATRIC DROPS

5 mg./drop (100 mg./cc.)

SYRUP

125 mg./tsp. (5 cc.)

# HIGHER PEAK ANALGESIA

## Butadol FOR ALL DEGREES OF PAIN\*

**INDICATIONS:**  
Tension Headache      Dysmenorrhea  
Premenstrual Tension      Bursitis  
Neuralgia      Neuritis  
After minor surgery and dental extractions.

**DOSAGE:**

BUTADOL — Adults, One or two capsules every 4 hours as indicated. Children 6 to 12 years of age, one-half the adult dose.

BUTADOL No. 2 — Usual dose, 1 or 2 capsules as needed.

BUTADOL No. 3 — Usual dose, 1 capsule as needed.

BUTADOL No. 4 — Usual dose, 1 capsule as needed.

**CAUTION:**

Federal law prohibits dispensing without prescription. Butadol with Codeine 15 mg., 30 mg., and 60 mg. are Class B Narcotic Preparations (Oral prescriptions permitted).

**PRECAUTION:**

Butadol and Butadol with Codeine may be habit forming.

**CONTRAINDICATIONS:**

There are no known contraindications to Butadol when taken as directed. Excessive doses should be avoided due to barbiturate and atropine content. Infrequently, individuals sensitive to barbiturates may experience lassitude, headaches, nausea or emotional disturbance.

**SIDE EFFECTS**

Some patients may display allergylike skin reactions as the result of an acquired sensitivity to barbiturates.

**SUPPLIED:**

Butadol — Bottles of 100, 1000 and 5000 capsules.

Butadol with Codeine Phosphate (all 3 strengths) — Bottles of 100 and 500 capsules.

Samples and Literature Gladly Sent  
Upon Request

**The BUTADOL Capsule Non Narcotic Formula:**

Each opaque gray and white capsule contains:

Butabarbital Sodium ..... 15 mg.

*Warning — May Be Habit Forming*

Acetaminophen ..... 250 mg.

Salicylamide ..... 200 mg.

Atropine Sulfate ..... .0012 mg.

Scopolamine Hydrobromide ..... .0048 mg.

Hyoscyamine Sulfate ..... .024 mg.

**BUTADOL No. 2 (For Moderate to Severe Pain)**

Each opaque light green and gray capsule contains Butadol with 15 mg. Codeine Phosphate.

**BUTADOL No. 3 (For More Severe Pain)**

Each opaque medium green and gray capsule contains Butadol with 30 mg. Codeine Phosphate.

**BUTADOL No. 4 (For Very Severe Pain \*)**

Each opaque bright green and gray capsule contains Butadol with 60 mg. Codeine Phosphate.

\**Except for those patients with intractable pain where recourse to morphine or addicting synthetic narcotics may be unavoidable.*

**PHYSICIANS** PRODUCTS CO., INC.  
PETERSBURG, VIRGINIA



# **Medrol... (methylprednisolone) a form for every use**

**MEDROL® TABLETS**  
2 mg. in bottles  
of 30 and 100  
4 mg. in bottles  
of 30, 100 and 500  
16 mg. in bottles of 50

SOLU-MEDROL®  
40 mg. in 1 cc.  
Mix-O-Vial®

MAX-Ö-VIAL

**MEDROL  
MEDULES\***

**DEPO-MEDROL**  
acetate  
40 mg./cc.  
in 1 cc. and  
5 cc. vials  
20 mg./cc.  
in 5 cc. vial



MEDROL  
WITH ORTHOXINE\*  
TABLETS

in bottles of 30 and 100

VERIDERM† MEDROL<sup>acetate</sup>  
AND  
NEO-MEDROL\*<sup>acetate</sup>  
0.25% and 1%  
in 5- and 20-Gm. tubes

MEDAPRIN\* TABLETS  
in bottles of 100 and 500

\*Trademark, Reg. U.S. Pat. Off.

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September, 1961

The Upjohn Company, Kalamazoo, Michigan

Upjohn

HOW  
**CARTRAX®**  
OFFERS  
BETTER PROTECTION  
AGAINST ANGINA PECTORIS  
THAN VASODILATORS  
ALONE:



TOGETHER—IN CARTRAX...

they decrease "length, severity, and amount of angina pectoris" in anxious cardiacs.<sup>1</sup>

Give your angina patient better protection by balancing supply and demand...with CARTRAX.

**note:** Should be given with caution in glaucoma.

**dosage:** Begin with 1 to 2 yellow CARTRAX "10" tablets (10 mg. PETN plus 10 mg. Atarax) 3 to 4 times daily. When indicated, this may be increased by switching to pink CARTRAX "20" tablets (20 mg. PETN plus 10 mg. Atarax). For convenience, write "CARTRAX 10" or "CARTRAX 20." Supplied in bottles of 100. Prescription only.

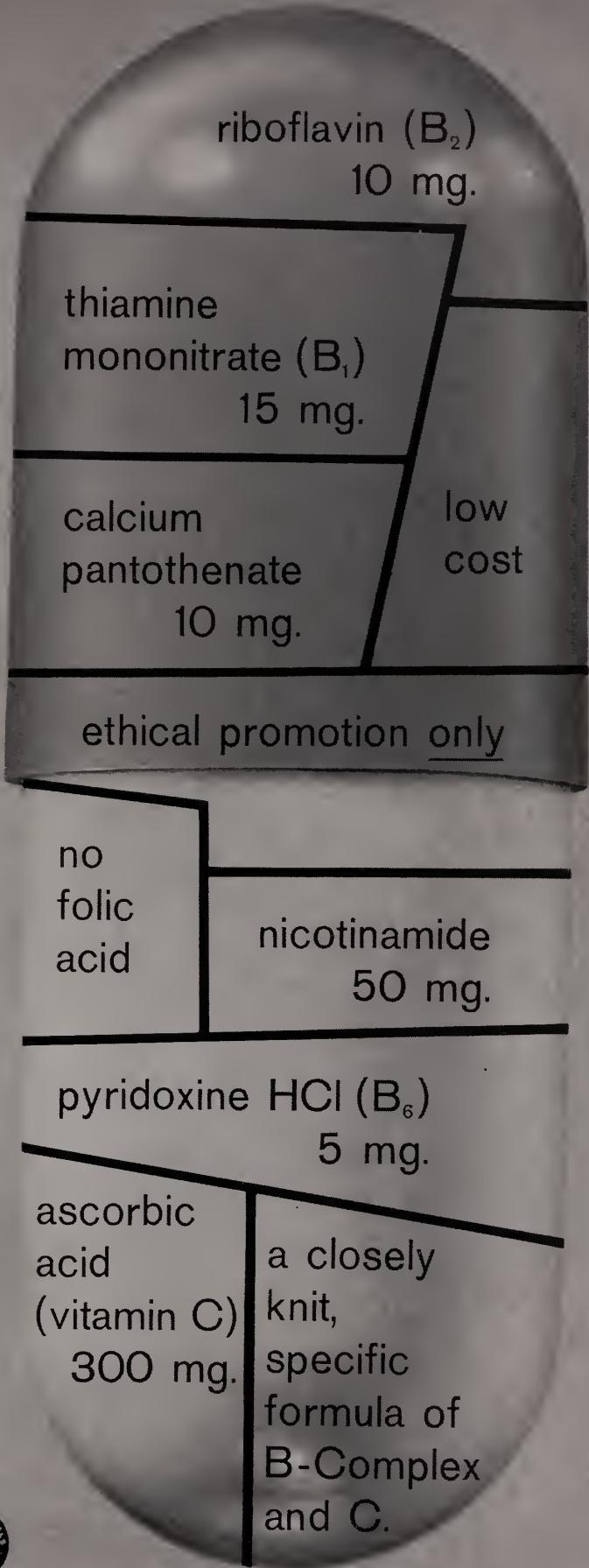
1. Clark, T. E., and Jochem, G. G.: Angiology 11:361 (Aug.) 1960.

\*brand of hydroxyzine \*\*pentaerythritol tetranitrate



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Division, Chas. Pfizer & Co., Inc.  
Science for the World's Well-Being®

this  
is  
what  
**Allbee®**  
with C  
is  
made  
of!



A. H. Robins Company, Inc.  
Richmond 20, Virginia



# Theragran®

SQUIBB VITAMINS FOR THERAPY

For your patients with infections or other illnesses who need therapeutic vitamin support. Each Theragran supplies the essential vitamins in truly therapeutic amounts:

Vitamin A . . . . .	25,000 U.S.P. Units
Vitamin D . . . . .	1,000 U.S.P. Units
Thiamine Mononitrate . . . . .	10 mg.
Riboflavin . . . . .	10 mg.
Niacinamide . . . . .	100 mg.
Vitamin C . . . . .	200 mg.
Pyridoxine Hydrochloride . . . . .	5 mg.
Calcium Pantothenate . . . . .	20 mg.
Vitamin B <sub>12</sub> . . . . .	5 mcg.



*Squibb Quality—the Priceless Ingredient*

\*Theragran® is a Squibb trademark

# **“nutrition...present as a modifying or complicating factor in nearly every illness or disease state”<sup>1</sup>**

1. Youmans, J. B.: Am. J. Med. 25:659 (Nov.) 1958

**cardiac diseases** “Who can say, for example, whether the patient chronically ill with myocardial failure may not have a poorer myocardium because of a moderate deficiency in the vitamin B-complex? Something is known of the relationship of vitamin C to the intercellular ground substance and repair of tissues. One may speculate upon the effects of a deficiency of this vitamin, short of scurvy, upon the tissues in chronic disease.”<sup>2</sup>

2. Kampmeier, R. H.: Am. J. Med. 25:662 (Nov.) 1958.

**arthritis** “It is our practice to prescribe a multiple vitamin preparation to patients with rheumatoid arthritis simply to insure nutritional adequacy . . .”<sup>3</sup>

3. Fernandez-Herlihy, L: Lahey Clinic Bull. 11:12 (July-Sept.) 1958.

**digestive diseases** Symptoms attributable to B-vitamin deficiency are commonly observed in patients on peptic ulcer diets.<sup>4</sup> Daily administration of therapeutic vitamins to patients with hepatitis and cirrhosis is recommended by the National Research Council.<sup>5</sup>

4. Sebrell, W. H.: Am. J. Med. 25:673 (Nov.) 1958. 5. Pollack, H., and Halpern, S. L.: Therapeutic Nutrition, National Academy of Sciences and National Research Council, Washington, D. C., 1952, p. 57.

**degenerative diseases** “Studies by Wexberg, Jolliffe and others have indicated that many of the symptoms attributed in the past to senility or to cerebral arteriosclerosis seem to respond with remarkable speed to the administration of vitamins, particularly niacin and ascorbic acid. These facts indicate that the vitamin reserve of aging persons is lowered, even to the danger point, more than is the case in the average American adult.”<sup>6</sup>

6. Overholser, W., and Fong, T.C.C. in Stieglitz, E. J.: Geriatric Medicine, 3rd edition, J. B. Lippincott, Philadelphia, 1954, p. 264.

**infectious diseases** Infections cause a lowering of ascorbic acid levels in the plasma; and the absorption of this vitamin is reduced in diarrheal states.<sup>7</sup>

7. Goldsmith, G. A.: Conference on Vitamin C. The New York Academy of Sciences, New York City, Oct. 7 and 8, 1960. Reported In: Medical Science 8:772 (Dec. 10) 1960.

**diabetes** Diabetics, like all patients on restricted diets, require an extra source of vitamins.<sup>8</sup> “Rigidly limiting the bread intake of the diabetic patient automatically eliminates a large amount of thiamin from the diet. . . . There is some evidence of interference with normal riboflavin utilization during catabolic episodes.”<sup>9</sup>

8. Duncan, G. G.: Diseases of Metabolism 4th edition W. B. Saunders, Philadelphia, 1959, p. 812. 9. Pollack, H.: Am. J. Med. 25:708 (Nov.) 1958.

FOR FULL INFORMATION SEE YOUR SQUIBB PRODUCT REFERENCE OR PRODUCT BRIEF.

RELIEVE  
PAIN  
AND FEVER  
OF COLDS  
GRIPPE  
SINUSITIS  
INFLUENZA



# HASAMAL®

(Analgesic-Antipyretic-Sedative)

- Relieves pain and tension
- Reduces fever
- Stops excessive nasal secretions
- Without unwanted diaphoresis

Hasamal, with mild sedation, effectively relieves malaise and discomfort associated with acute infectious disease, such as colds, grippe, sinusitis, tonsillitis, and for earache, headache, and pain of arthritis, neuritis, neuralgia, dysmenorrhea, etc.

Where pain of increased intensity occurs, HASACODE, containing  $\frac{1}{4}$  gr. codeine phosphate, and HASACODE "STRONG," containing  $\frac{1}{2}$  gr. codeine phosphate, provide prompt, effective relief.

**Composition:** HASAMAL: Each tablet or capsule contains: Acetylsalicylic acid,  $2\frac{1}{2}$  gr., acetophenetidin,  $2\frac{1}{2}$  gr., phenobarbital,  $\frac{1}{4}$  gr., and hyoscyamus alkaloids, .0337 mg. HASACODE combines the same formula as Hasamal with  $\frac{1}{4}$  gr. codeine phosphate, and HASACODE "STRONG"  $\frac{1}{2}$  gr. codeine phosphate.

**Dosage:** Hasamal: One or two tablets or capsules every 3 to 4 hours. Hasacode: One or two tablets every 3 or 4 hours; not more than 8 tablets should be taken in 24 hours. **Warning:** Do not use in patients with glaucoma or in elderly patients with prostatic hypertrophy.

CHARLES C. HASKELL & COMPANY  
Richmond, Virginia



Even if you prescribed a year's supply



Actually, doctor, labeled potency will last a much longer time. While we would never recommend by-the-year dosage of a therapeutic nutritional, this does illustrate the unusual stability of Optilets.

The reason, of course, is Filmtab coating. Unlike previous sugar coatings, no water is needed for application. This virtually eliminates chances of moisture degradation.

Greater stability, however, is just one of Optilets advantages. Without sugar's bulk, we can make tablets up to 30% smaller in size. Coatings are less brittle, and tablets less apt to chip or break. As Filmtab coatings are no more than paper-thin, nutrients are more readily available. Yet, patients are protected from vitamin odors and after-tastes.

While stability is important and easy administration an advantage, ingredients are, of course, the main criteria for any nutritional. Please check the Optilets formulas, doctor. We think you'll find them a good choice for your patients.

ABBOTT LABORATORIES NORTH CHICAGO, ILLINOIS

### Optilets

Each Filmtab represents:

Vitamin A	7.5 mg. (25,000 units)
Vitamin D	25 mcg. (1000 units)
Thiamine Hydrochloride	10 mg.
Riboflavin	5 mg.
Nicotinamide	100 mg.
Pyridoxine Hydrochloride	5 mg.
Cobalamin (Vitamin B <sub>12</sub> )	6 mcg.
Calcium Pantothenate	20 mg.
Ascorbic Acid	200 mg.

### Optilets-M®

Each Filmtab represents all the vitamins of Optilets plus the following:

Iron (as sulfate)	10 mg.
Copper (as sulfate)	1 mg.
Iodine (as calcium iodate)	0.15 mg.
Cobalt (as sulfate)	0.1 mg.
Manganese (as sulfate)	1 mg.
Magnesium (as oxide)	5 mg.
Zinc (as sulfate)	1.5 mg.
Molybdenum (as sodium molybdate)	0.2 mg.

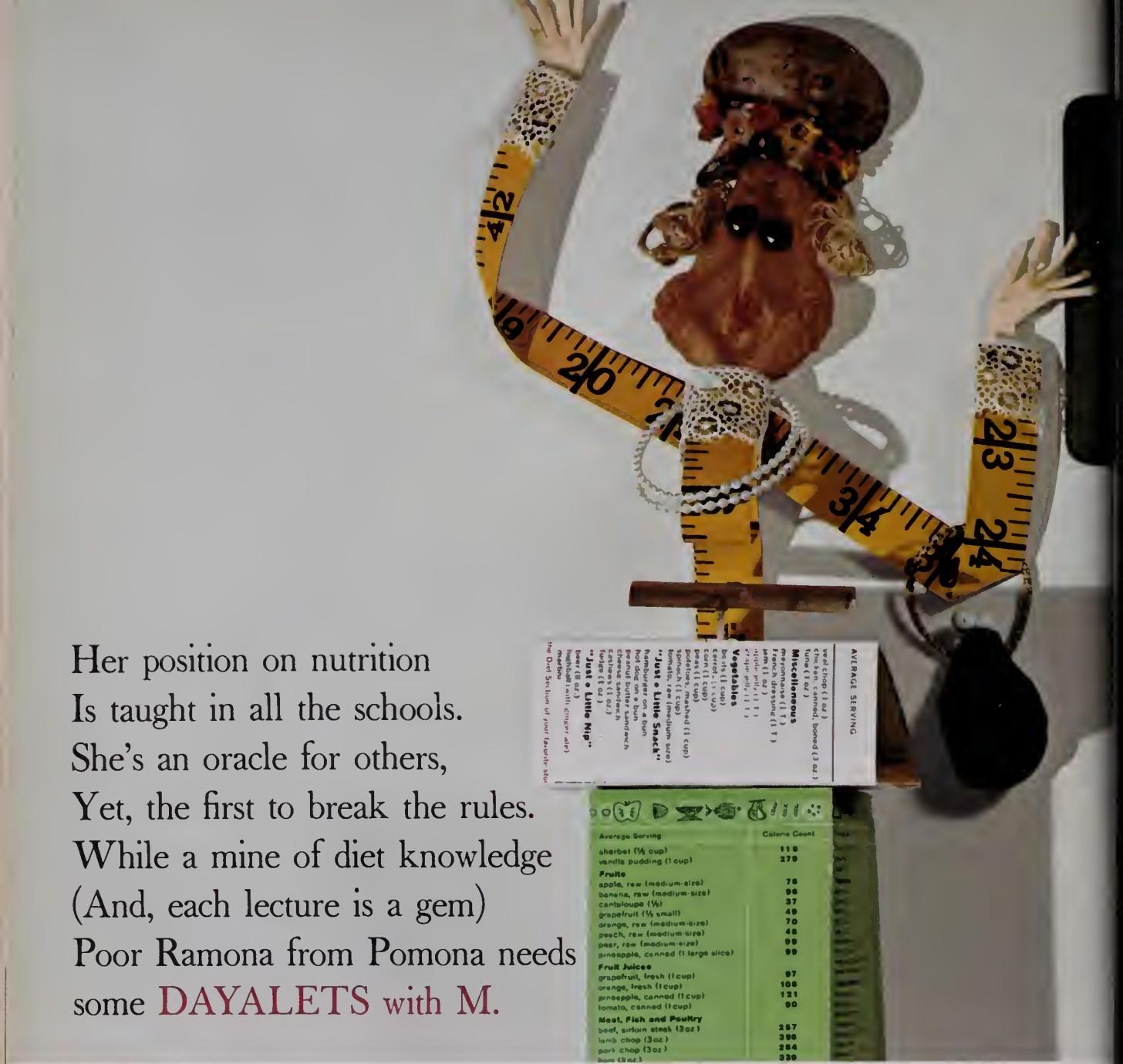
Her position on nutrition  
Is taught in all the schools.  
She's an oracle for others,  
Yet, the first to break the rules.  
While a mine of diet knowledge  
(And, each lecture is a gem)  
Poor Ramona from Pomona needs  
some **DAYALETS** with M.

AVERAGE SERVING	
water (8 oz.)	
chicken, canned, boned (3 oz.)	
tuna (1 oz.)	
<b>Miscellaneous</b>	
macaroni (1 lb.)	
French dressing (1 T.)	
French fries (1 lb.)	
potato chips (1 lb.)	
“Just Little Snack”	
<b>Vegetables</b>	
beets (1 cup)	
carrots (1 cup)	
corn (1 cup)	
peas (1 cup)	
potatoes, mashed (1 cup)	
potato, raw (medium size)	
potato chips (1 oz.)	
hamburgers (on a bun)	
hot dog (on a bun)	
cheese sandwich (1 oz.)	
cathartes (1 oz.)	
turkey (1 oz.)	
“Just Little Dip”	
beer (8 oz. 6%)	
hamball (1 oz., kidney ale)	
<b>Meats</b>	
meat loaf (1 lb.)	
steak (1 lb.)	
lamb chop (3 oz.)	
pork chop (3 oz.)	
bacon (8 oz.)	

Average Serving	Calorie Count
sherbet (1/2 cup)	110
vanilla pudding (1 cup)	270
<b>Fruits</b>	
apple, raw (medium-size)	70
banana, raw (medium-size)	90
canaloupe (1/2)	37
grapes, raw (1 small)	40
orange, raw (medium-size)	70
peach, raw (medium-size)	40
pear, raw (medium-size)	90
pineapple, canned (1 large slice)	90
<b>Fruit Juices</b>	
grapefruit, fresh (1 cup)	97
orange, fresh (1 cup)	108
pineapple, canned (1 cup)	121
tomato, canned (1 cup)	90
<b>Meat, Fish and Poultry</b>	
beef, sirloin steak (3 oz.)	257
lamb chop (3 oz.)	300
pork chop (3 oz.)	264
bacon (8 oz.)	339

Likes, dislikes, and time schedules never interfere with her lectures, doctor, just her diet. She could live in a grocery store and still eat poorly. While Dayalets-M can't replace self-discipline, it can help insure optimal nutrition. Tablets are tiny, potent, and Filmtab-coated. Patients like taking them.

Filmtab® DAYALETS-M®...essential vitamins plus 8 minerals in the most compact tablet of its kind





## Today's little "limey" needs a half barrel of orange juice

...or, to be exact, a total of 2,106 ounces in his first two years. And how much he'll need during his first twenty years would have to be measured by the truck-load, because the need for the nutrients contained in Florida orange juice continues throughout life.

How our little "limey" or any of your other patients obtain the vitamins and nutrients found in citrus fruits is important to them and to you. There are so many wrong ways, so many substitutes and imitations for the real thing.

For a way that combines real nutrition with real pleasure, there's nothing better than the oranges and grapefruit ripened under Florida's own sunshine. Somehow, nothing can surpass the result of the combination of sun, air, temperature, and soil found in Florida.

It's good nutrition to encourage people to drink orange juice. It's even more judicious to encourage them to drink the juices and eat the fruits watched over by the Florida Citrus Commission. These men set the world's

highest standards of quality in fresh, frozen, canned, or cartoned citrus fruits and juices.

When you suggest to your patients that they have a big glass of orange juice for breakfast, or for a snack, or when they want to raid the refrigerator, the deliciousness of Florida orange juice will give you assurance that they'll *want* to carry out your recommendation. You'll be helping them to the finest drink there is—by the glassful or the barrel.

© Florida Citrus Commission, Lakeland, Florida

“The first prescription I ever wrote  
was for ‘Empirin’ with Codeine...



# and it is still my stand-by for pain relief today.”

PICTURE THE YOUNG DOCTOR with his first private patient, about thirty-five years ago. This is the moment, after years of study and guidance in classroom and at hospital bedside, when he assumes the full weight of responsibility for the well-being of his patient. He makes his diagnosis. The patient is in considerable pain, and his first concern is to relieve this discomfort. He writes a prescription for a new analgesic, a convenient drug combination that he believes will be of help. This patient (and many others to follow) finds gratifying relief, and the physician continues to rely upon this medication as the years go by.

Could this have been you in the 1920's? That was when 'Empirin' Compound with Codeine first came into general use (although plain 'Empirin' Compound has been well-known since the influenza epidemic of 1918). Satisfaction through the years has prompted doctors everywhere to depend on 'Empirin' with Codeine for relief of most all degrees of pain. For with this well-tolerated, reliable analgesic combination you can be sure of results, and feel secure in the fact that the liability of addiction is negligible.

Please accept our thanks for continuing to place your trust in a product that has been used more widely in medicine each year for the past four decades.

## 'EMPIRIN' COMPOUND with CODEINE PHOSPHATE\*

Acetophenetidin, gr. 2½

Acetylsalicylic Acid, gr. 3½

Caffeine, gr. ½

*Remember there are now  
four strengths available...*

No. 1 — gr. ¼

No. 2 — gr. ¼

No. 3 — gr. ½

No. 4 — gr. 1

\*Warning—May be habit-forming.  
Subject to Federal Narcotic Regulations.



BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, N. Y.



1½ Grs. Ea.  
FLAVORED

## Living up to a family tradition

There are probably certain medications which are special favorites of yours, medications in which you have a particular confidence.

Physicians, through ever increasing recommendation, have long demonstrated their confidence in the uniformity, potency and purity of Bayer Aspirin, the world's first aspirin.

And like Bayer Aspirin, Bayer Aspirin for Children is quality controlled. No other maker submits aspirin to such thorough quality controls as does Bayer. This assures uniform excellence in both forms of Bayer Aspirin.

You can depend on Bayer Aspirin for Children for it has been conscientiously formulated to be the best tasting aspirin ever made and to live up to the Bayer family tradition of providing the finest aspirin the world has ever known.

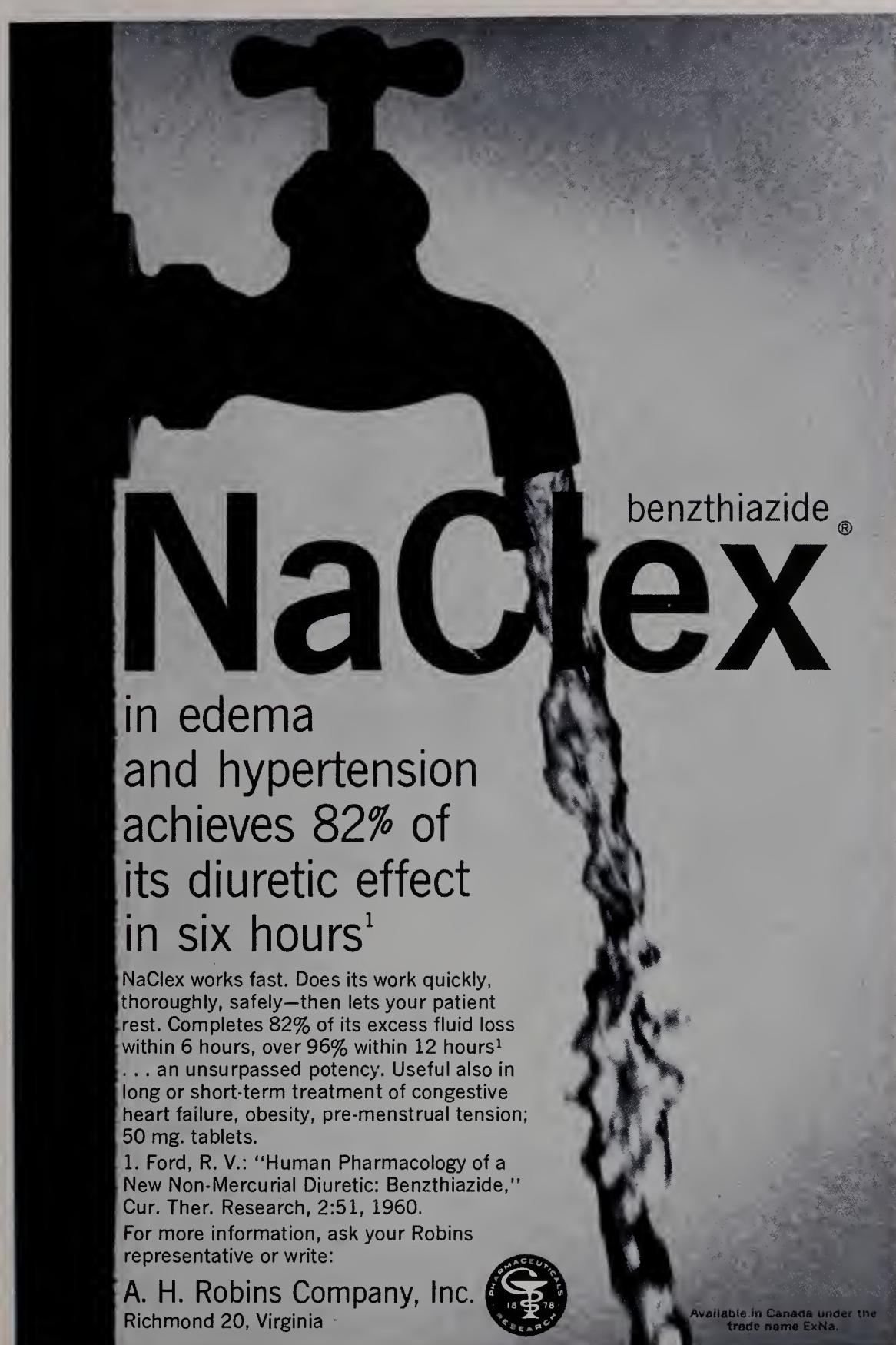
Bayer Aspirin for Children—1½ grain flavored tablets—Supplied in bottles of 50.

- We welcome your requests for samples on Bayer Aspirin and Flavored Bayer Aspirin for Children.

New  
**GRIP-TIGHT CAP**  
for Children's  
Greater Protection



THE BAYER COMPANY, DIVISION OF STERLING DRUG INC., 1450 BROADWAY, NEW YORK 18, N.Y.



# NaClex

benzthiazide®

in edema  
and hypertension  
achieves 82% of  
its diuretic effect  
in six hours<sup>1</sup>

NaClex works fast. Does it work quickly, thoroughly, safely—then lets your patient rest. Completes 82% of its excess fluid loss within 6 hours, over 96% within 12 hours<sup>1</sup> . . . an unsurpassed potency. Useful also in long or short-term treatment of congestive heart failure, obesity, pre-menstrual tension; 50 mg. tablets.

1. Ford, R. V.: "Human Pharmacology of a New Non-Mercurial Diuretic: Benzthiazide," Cur. Ther. Research, 2:51, 1960.

For more information, ask your Robins representative or write:

A. H. Robins Company, Inc.  
Richmond 20, Virginia



Available in Canada under the  
trade name ExNa.



# Calms the Tense, Nervous Patient in anxiety and depression

The outstanding effectiveness and safety with which Miltown calms tension and nervousness has been clinically authenticated by thousands of physicians during the past six years. This, undoubtedly, is one reason why meprobamate is still the most widely prescribed tranquilizer in the world.

Its response is predictable. It will not produce unpleasant surprises for either the patient or the physician. Small wonder that many physicians have awarded Miltown the status of a proven, dependable friend.

## Miltown®

meprobamate (Wallace)

**Usual dosage:** One or two 400 mg. tablets t.i.d.

**Supplied:** 400 mg. scored tablets, 200 mg. sugar-coated tablets; bottles of 50. Also as MEPROTABS®—400 mg. unmarked, coated tablets; and in sustained-release capsules as MEPROSPAN®—400 and MEPROSPAN®—200 (containing respectively 400 mg. and 200 mg. meprobamate).

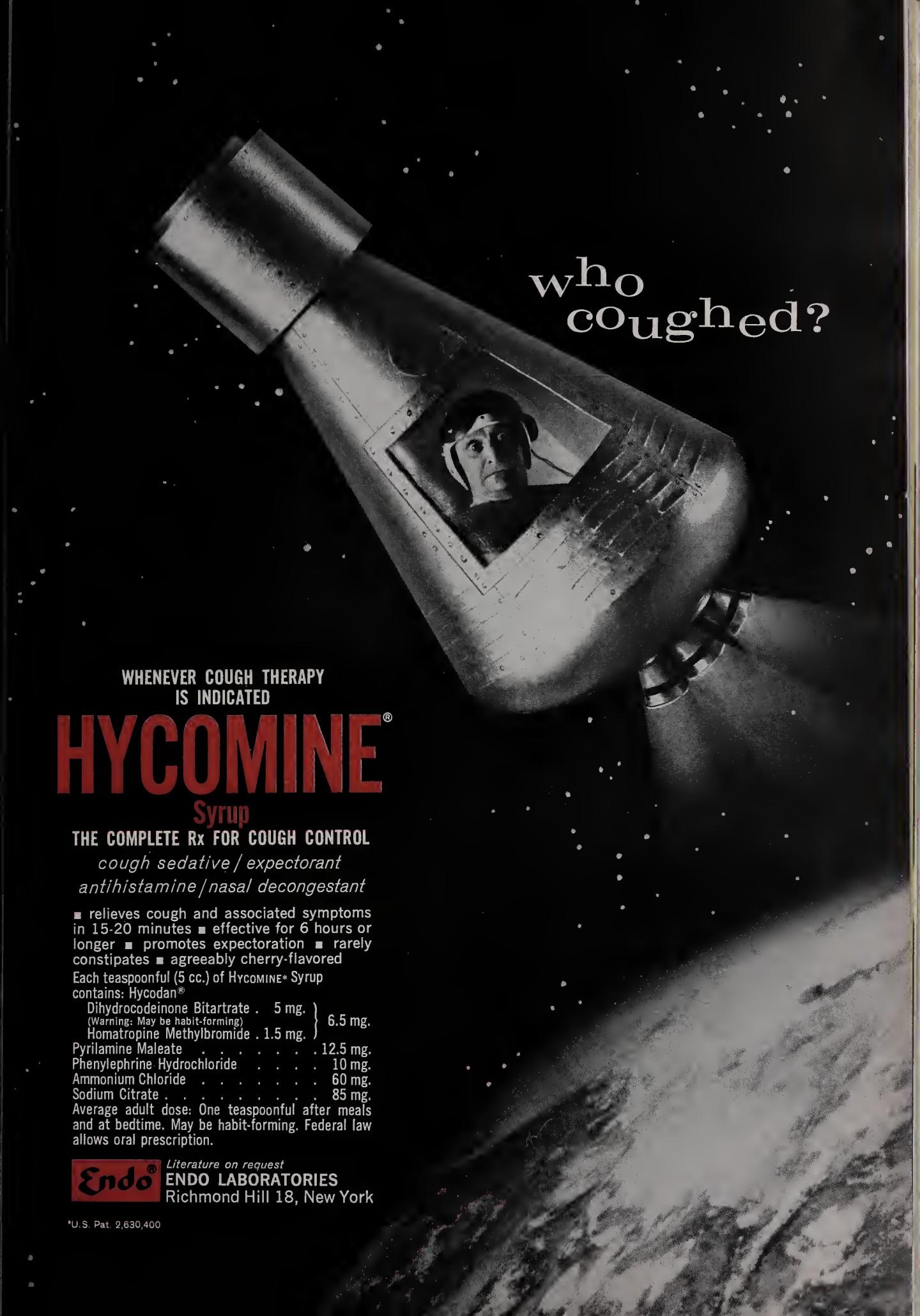
 WALLACE LABORATORIES  
Cranbury, N.J.

Clinically proven  
in over 750  
published studies

1 Acts dependably —  
without causing ataxia or  
altering sexual function

2 Does not produce  
Parkinson-like symptoms,  
liver damage or  
agranulocytosis

3 Does not muddle  
the mind or affect  
normal behavior



who  
coughed?

WHENEVER COUGH THERAPY  
IS INDICATED

# HYCOMINE® Syrup

THE COMPLETE Rx FOR COUGH CONTROL

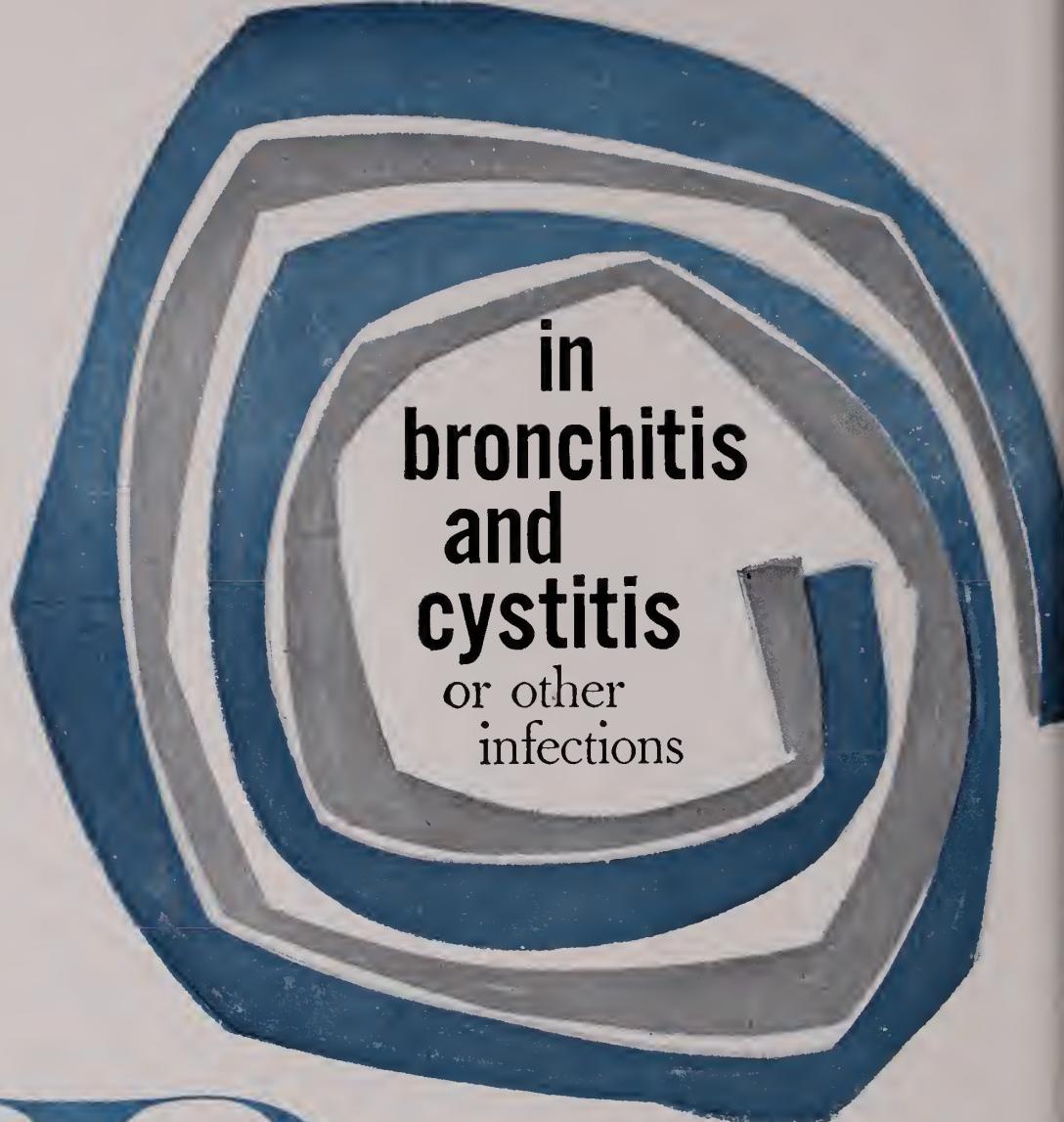
cough sedative / expectorant  
antihistamine / nasal decongestant

- relieves cough and associated symptoms in 15-20 minutes
- effective for 6 hours or longer
- promotes expectoration
- rarely constipates
- agreeably cherry-flavored

Each teaspoonful (5 cc.) of HYCOMINE\* Syrup contains: Hycodan®

Dihydrocodeinone Bitartrate . . . . .	5 mg.	}	6.5 mg.
(Warning: May be habit-forming)			
Homatropine Methylbromide . . . . .	1.5 mg.		
Pyrilamine Maleate . . . . .	12.5 mg.		
Phenylephrine Hydrochloride . . . . .	10 mg.		
Ammonium Chloride . . . . .	60 mg.		
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Average adult dose: One teaspoonful after meals and at bedtime. May be habit-forming. Federal law allows oral prescription.			

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PEDIATRIC DROPS, 60 mg./cc. in 10 cc. bottle with calibrated, plastic dropper. *Dosage:* 1 to 2 drops (3 to 6 mg.) per pound body weight per day—divided into four doses.

SYRUP, 75 mg./5 cc. teaspoonful (cherry-flavored). *Dosage:* 3 to 6 mg. per pound body weight per day—divided into four doses.

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- flexible enough so that in severe cases dosage may be raised to two or three times the recommended starting level

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Because of its pronounced calming effect, 'Thorazine' is an outstanding agent for patients with mental and emotional disturbances, particularly those with symptoms of agitation and hyperactivity. In severe cases, initial use of intramuscular administration may be desirable to control symptoms promptly.

Before prescribing 'Thorazine' for other indications than those given below, the physician should be familiar with the dosage, side effects, cautions and contraindications for such uses. This information is available in the *'Thorazine' Reference Manual and Physicians' Desk Reference*, and from your SK&F representative or your pharmacist.

### ADMINISTRATION AND DOSAGE

Dosage should always be adjusted to the response of the individual and according to the severity of the condition. It is important to increase dosage until symptoms are controlled or side effects become troublesome. In emaciated or senile patients, dosage increases should be made more gradually than in other patients.

### ADULT DOSAGE

**Mental and Emotional Disturbances (e.g., agitation, excitement, or anxiety)—Starting oral dosage** is 10 mg. t.i.d. or q.i.d., or 25 mg. b.i.d. or t.i.d. After a day or two, dosage may be increased by increments of 20 mg. to 50 mg. daily, at semiweekly intervals, until maximum clinical response is achieved. Continue dosage at this level for at least two weeks; then it can usually be reduced to a maintenance level. A daily dosage of 200 mg. is "average," but some patients may require substantially higher dosages. Discharged mental patients, for example, may require daily dosages as high as 800 mg. **Starting intramuscular dose** is 25 mg. (cc.). If necessary, and if no hypotension occurs, repeat the initial dose in one hour. Subsequent dosages should be oral, starting at 25 mg. to 50 mg. t.i.d.

**Alcoholism—Severely agitated patients:** **Starting intramuscular dose** is 25 mg. to 50 mg. (1-2 cc.). Repeat initial dose if necessary and if no hypotension occurs. Start subsequent oral dosages at 25 mg. to 50 mg. t.i.d. **Agitated but manageable patients:** **Starting oral dose** is 50 mg., followed by 25 mg. to 50 mg. t.i.d. For ambulatory patients with withdrawal symptoms or sober chronic alcoholics, **starting oral dosage** is 10 mg. t.i.d. or q.i.d., or 25 mg. b.i.d. or t.i.d. Patients in a stuporous condition should be allowed to sleep off some of the effects of the alcohol before 'Thorazine' is administered.

### CHILDREN'S DOSAGE

**For Behavior Disorders—Orol dosage** is on the basis of 1/4 mg./lb. of body weight q4-6h, until symptoms are controlled (i.e., for 40 lb. child—10 mg. q4-6h). **Rectal dosage** is on the basis of 1/2 mg./lb. of body weight q6-8h, p.r.n. (i.e., for 20-30 lb. child—half of a 25 mg. suppository q6-8h). **Intramuscular dosage** is on the basis of 1/4 mg./lb. of body weight q6-8h, p.r.n. In children up to 5 years (or 50 lbs.)—not over 40 mg./day; in children 5-12 years (or 50-100 lbs.)—not over 75 mg./day except in extreme unmanageable cases. In severe cases, higher dosages than those recommended above may be necessary. In such cases, 50-100 mg. daily has been used and, in older children, as much as 200 mg. daily or more may be required.

### IMPORTANT NOTES ON INJECTION

Except for acute ambulatory cases, parenteral administration should generally be reserved for bedfast patients. Parenteral administration should always be made with the patient lying down and remaining so for at least 1/2 hour afterward because of possible hypotensive effects. The injection should be given slowly, deep into the upper outer quadrant of the buttock. If irritation and pain at the site of injection are problems, dilution of 'Thorazine' Injection with physiologic saline solution or 2% procaine solution may be helpful. Subcutaneous administration is not advisable, and care should be taken to avoid injecting undiluted 'Thorazine' Injection into a vein. Intravenous administration is recommended only for severe hiccups and surgery.

'Thorazine' Injection should not be mixed with other agents in the syringe. Because contact dermatitis has been reported with 'Thorazine', nurses or others giving frequent injections should avoid getting the solution on hands or clothing. 'Thorazine' Injection should be protected from light, since exposure may cause discoloration. Slight yellowish discoloration will not alter potency or efficacy. If markedly discolored, the solution should be discarded.

### SIDE EFFECTS

The drowsiness caused by 'Thorazine' is usually mild to moderate and disappears after the first or second week of therapy. If, however, drowsiness is troublesome, it can usually be controlled by lowering the dosage or by administering small amounts of dextroamphetamine. Other side effects reported occasionally are dryness of the mouth, nasal congestion, some constipation, miosis in a few patients and, very rarely, mydriasis.

Mild fever (99°F.) may occur occasionally during the first days of therapy with large intramuscular doses.

Some patients have an increased appetite and gain weight, but usually reach a plateau beyond which they do not gain.

### CAUTIONS

**Jaundice:** The over-all incidence of jaundice due to 'Thorazine' has been low—regardless of indication, dosage, or mode of administration. It appears to be related to duration of therapy. Few cases have occurred in less than one week or after six weeks. The jaundice that has occurred mimics the obstructive type, is without parenchymal damage, and is usually promptly reversible upon the withdrawal of 'Thorazine'. Although the mechanism is not clearly understood, most investigators conclude that it is a sensitivity reaction in susceptible individuals.

There is no conclusive evidence to indicate that pre-existing liver disease makes the patient more susceptible to jaundice. (Patients with known alcoholic cirrhosis have been treated with 'Thorazine' without further alteration of liver function.) Nevertheless, 'Thorazine' should be used with due consideration in a patient with liver disease. If a patient on 'Thorazine' suddenly develops fever with gripe-like symptoms, his serum should be tested for increased bilirubin or his urine for the presence of bile. If any of these tests are positive, 'Thorazine' should be discontinued.

Because detailed liver function tests of 'Thorazine'-induced jaundice give a picture which mimics extrahepatic obstruction, exploratory

laparotomy should be withheld until sufficient studies confirm extrahepatic obstruction.

**Agranulocytosis:** Agranulocytosis, although rare, has been reported. Patients should be observed regularly and asked to report at once the sudden appearance of sore throat or other signs of infection. If white blood counts and differential smears give an indication of cellular depression, the drug should be discontinued, and antibiotic and other suitable therapy should be instituted.

Because most reported cases have occurred between the fourth and the tenth weeks of treatment, patients on prolonged therapy should be observed particularly during that period.

A moderate suppression of total white blood cells, sometimes observed in patients on 'Thorazine' therapy, is not an indication for discontinuing 'Thorazine' unless accompanied by other symptoms. **Potentiation:** 'Thorazine' prolongs and intensifies the action of many central nervous system depressants such as anesthetics, barbiturates and narcotics. Consequently, it is advisable to stop administration of such depressants before initiating 'Thorazine' therapy. Later the depressant agents may be reinstated, starting with low doses, and increasing according to response. Approximately 1/4 to 1/2 the usual dosage of such agents is required when they are given in combination with 'Thorazine'. (However, 'Thorazine' does not potentiate the anticonvulsant action of barbiturates. In patients who are receiving anticonvulsants, the dosage of these agents—including barbiturates—should not be reduced if 'Thorazine' is started. Rather, 'Thorazine' should be started at a very low dosage and increased, if necessary.)

**Hypotensive Effect:** Postural hypotension and simple tachycardia may be noted in some patients. In these patients, momentary fainting and some dizziness are characteristic and usually occur shortly after the first parenteral dose, occasionally after a subsequent parenteral dose—very rarely after the first oral dose. In most cases, prompt recovery is spontaneous and all symptoms disappear within ½ to 2 hours with no subsequent ill effects. Occasionally, however, this hypotensive effect may be more severe and prolonged, producing a shock-like condition.

In consideration of possible hypotensive effects, the patient should be kept under observation (preferably lying down) for some time after the initial parenteral dose. If, on rare occasions, hypotension does occur, it can ordinarily be controlled by placing the patient in a recumbent position with head lowered and legs raised. If a vasoconstrictor is required, 'Levophed' and 'Neo-Synephrine'\* are the most suitable. Other pressor agents, including epinephrine, are not recommended because phenothiazine derivatives may reverse the usual elevating action of these agents and cause a further lowering of blood pressure.

**Antiemetic Effect:** The antiemetic effect of 'Thorazine' may mask signs of overdose of toxic drugs and may obscure diagnosis of conditions such as intestinal obstruction and brain tumor.

**Dermatological Reactions:** Dermatological reactions have been reported. Most have been of a mild urticarial type, suggesting allergic origin. Some appear to be due to photosensitivity, and patients on 'Thorazine' should avoid undue exposure to the summer sun.

**Neuromuscular (Extrapyramidal) Reactions:** With very high doses of 'Thorazine', as frequently used in psychiatric cases over long periods, a few patients have exhibited neuromuscular (extrapyramidal) reactions which closely resemble parkinsonism. Such symptoms are reversible and usually disappear within a short time after the dosage has been decreased or the drug temporarily withdrawn. These reactions can also be controlled by the concomitant administration of an anti-parkinsonism agent (see *Physicians' Desk Reference*). Depending on the severity of the symptoms, suitable supportive measures such as maintaining a clear airway and adequate hydration should be employed. When 'Thorazine' is reinstated, it should be at a lower dosage.

**Lactation:** Moderate engorgement of the breast with lactation has been observed in female patients receiving very large doses of 'Thorazine'. This is a temporary condition which disappears on reduction of dosage or withdrawal of the drug.

### CONTRAINdications

'Thorazine' is contraindicated in comatose states due to central nervous system depressants (alcohol, barbiturates, narcotics, etc.) and also in patients under the influence of large amounts of barbiturates or narcotics.

### SUPPLIED

Tablets, 10 mg., 25 mg., 50 mg. and 100 mg., in bottles of 50, 500 and 5000; 200 mg., for use in mental hospitals, in bottles of 500 and 5000. (Each tablet contains 10 mg., 25 mg., 50 mg., 100 mg., or 200 mg. of chlorpromazine hydrochloride.)

Spanspule® capsules, 30 mg., 75 mg., 150 mg. and 200 mg., in bottles of 30, 250 and 1500; also 300 mg., in bottles of 30 and 1500. (Each 'Spanspule' capsule contains 30 mg., 75 mg., 150 mg., 200 mg., or 300 mg. of chlorpromazine hydrochloride.) Ampuls, 1 cc. and 2 cc. (25 mg./cc.), in boxes of 6, 100 and 500. (Each cc. contains, in aqueous solution, 25 mg. of chlorpromazine hydrochloride; 2 mg. of ascorbic acid; 1 mg. of sodium bisulfite; 1 mg. of sodium sulfite; 6 mg. of sodium chloride.)

Multiple-dose Vials, 10 cc. (25 mg./cc.), in boxes of 1, 20 and 100. (Each cc. contains, in aqueous solution, 25 mg. of chlorpromazine hydrochloride; 2 mg. of ascorbic acid; 1 mg. of sodium bisulfite; 1 mg. of sodium sulfite; 1 mg. of sodium chloride; 2% benzyl alcohol as preservative.)

Syrup, 10 mg./teaspoonful (5 cc.), in 4 fl. oz. bottles. (Each 5 cc. contains 10 mg. of chlorpromazine hydrochloride.)

Suppositories, 25 mg. and 100 mg., in boxes of 6. (Each suppository contains 25 mg. or 100 mg. of chlorpromazine; glycerin, glyceryl monopalmitate, glyceryl monostearate, hydrogenated cocoanut oil fatty acids, hydrogenated palm kernel oil fatty acids, lecithin.)

Concentrate (for hospital use), 30 mg./cc., in 4 fl. oz. bottles, in cartons of 12 and 36, and in gallon bottles. (Each cc. contains 30 mg. of chlorpromazine hydrochloride.)

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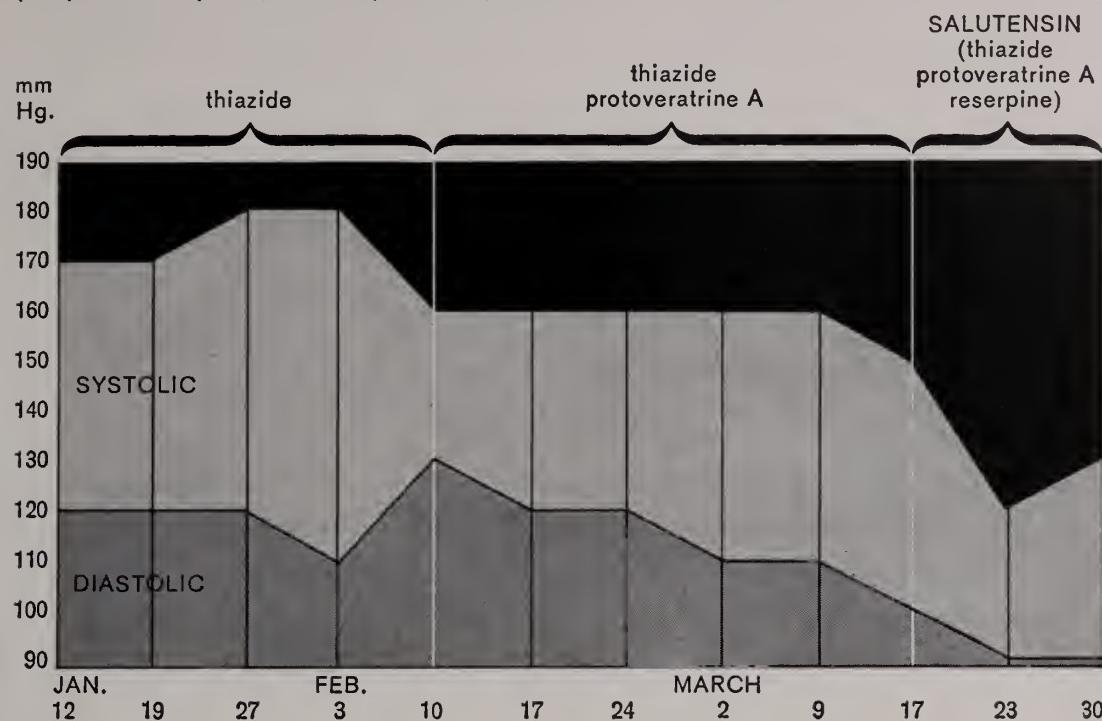
**Supplied:** Bottles of 60 scored tablets.

**References:** 1. Fries, E. D.: In Hypertension, ed. by J. H. Moyer, Saunders, Phila., 1959 p. 123. 2. Fries, E. D.: South M. J. 51:1281 (Oct.) 1958. 3. Finnerty, F. A. and Buchholz, J. H.: GP 17:95 (Feb.) 1958. 4. Gill, R. J., et al.: Am. Pract. & Digest Treat. 11:1007 (Dec.) 1960. 5. Brest, A. N. and Moyer, J. H.: J. South Carolina M. A. 56:171 (May) 1960. 6. Wilkins R. W.: Postgrad. Med. 26:59 (July) 1959. 7. Gifford, R. W., Jr.: Read at the Hahnemann Symp. on Hypertension, Phila. Dec. 8 to 13, 1958. 8. Fries, E. D., et al.: J. A. M. A. 166:137 (Jan. 11) 1958. 9. Ford, R. V. and Nickell, J.: Ant. Med. & Clin. Ther. 6:461, 1959.

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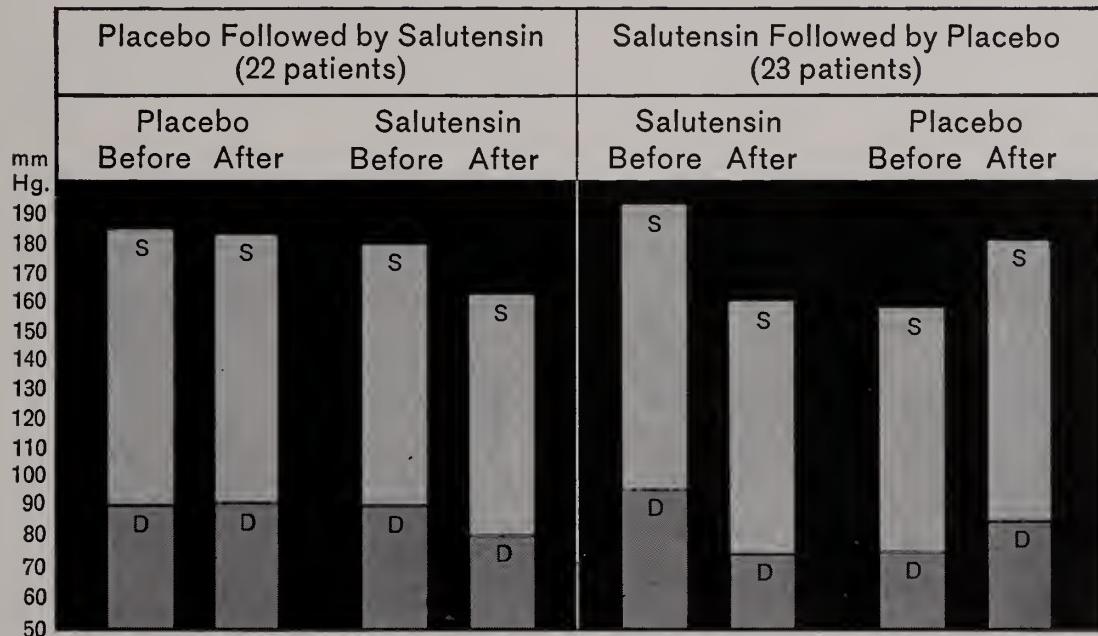
**11 WEEKS TO LOWER BLOOD PRESSURE TO DESIRED LEVELS BY SERIAL ADDITION OF THE INGREDIENTS IN SALUTENSIN IN A TEST CASE**

(Adapted from Spiotta, E. J.: Report to Department of Clinical Investigation, Bristol Laboratories)



**3½ WEEKS TO LOWER BLOOD PRESSURE TO DESIRED LEVELS USING SALUTENSIN FROM THE START OF THERAPY IN A "DOUBLE BLIND" CROSSOVER STUDY**

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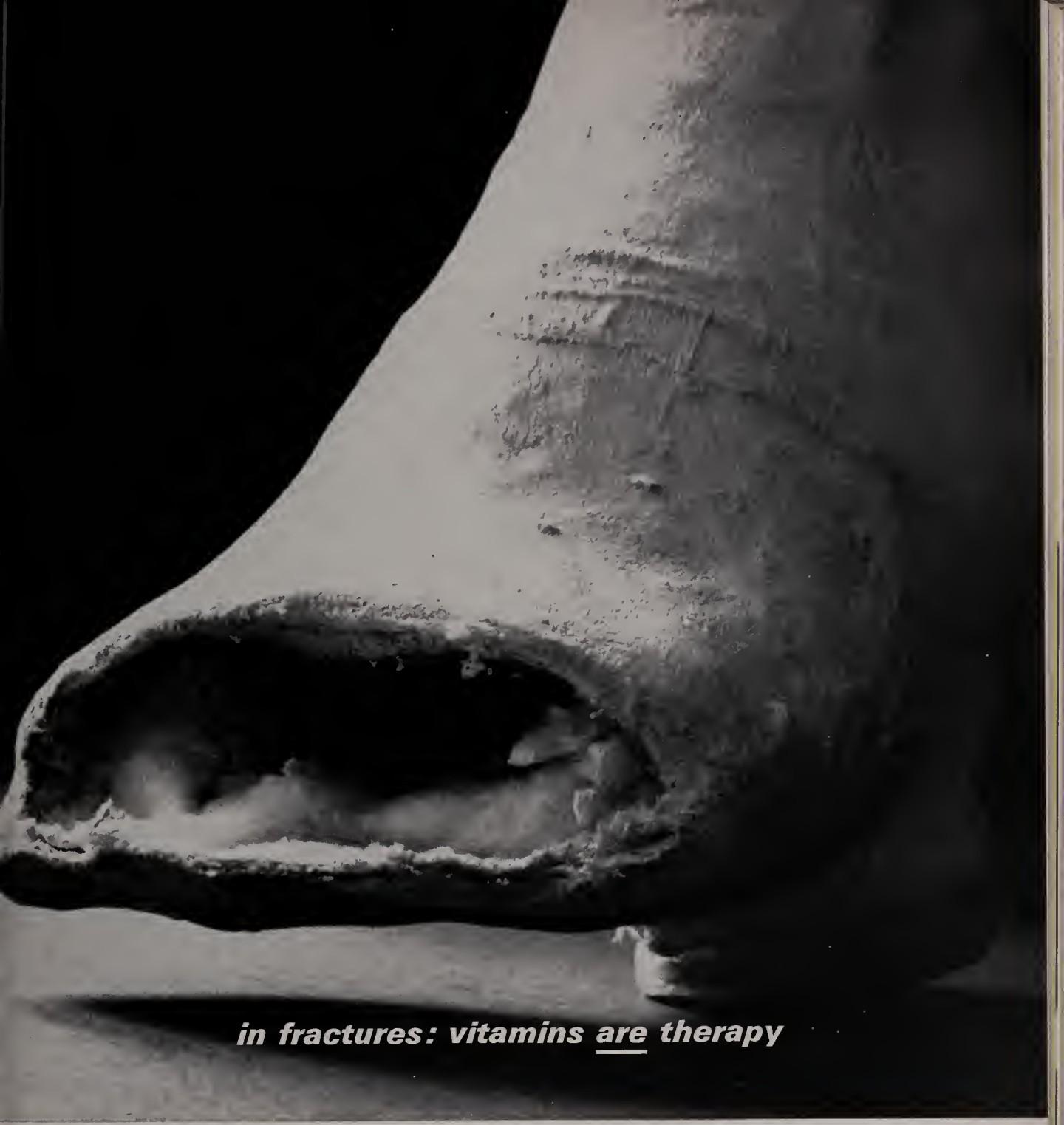
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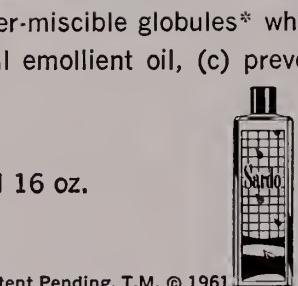
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# *The Virginia* MEDICAL MONTHLY

January, 1962

VOL. 89, No. 1  
Whole No. 1316

## Guest Editorial . . .

### Virginia-Richmond-and the Medical College of Virginia

*IF A MAN gives sixty years of intense interest and forty-five years of active effort to an institution, he surely has the right to have opinions. If he has no axe to grind, and is not senile, then these opinions should be considered for what they are worth.*

The growth of the Medical College of Virginia is gargantuan. There is a sense of pride to any alumnus in the enormous buildings and the extent of development that denotes power; but growth is not an end in itself.

Growth is movement; you can grow to an objective and grow away from other values. Unbalanced growth can lead to deformity. Hypertrophy can be as dangerous as atrophy. Material values are obvious but a review of spiritual values seems to this writer distinctly in order.

For many years, the college has brought in a number of new minds, usually as full-time teachers and officials, and each of these minds has come here with something of the foreign missionary in their approach. They seem to feel they have the opportunity to change things for the better and their idea of what is better is usually built on the excellencies of their Alma Mater. They seem to want to supplant a pattern, for the pattern already in existence, taking scant account of the traditions and mores of the place to which they have come. Harvard, for instance, is probably the greatest of the Medical Schools but these new men do not seem to know that Harvard would be almost as much out of place in Richmond as the Confederate Museum would be in Boston. An enormous tradition has built up here and has to be reckoned with.

These new minds have been brought here because of the necessity of full-time teachers and there has come into being, not too positively expressed, the view, that this is a trend to the time when the College will be fully staffed by full-time men and the "Closed Staff" will be realized as something that is good and to be desired.

From an executive viewpoint this is easily understood, but one notes in this spate of new buildings and halls, that when named, they are called McGuire, George Ben Johnston, Ennion Williams, Hunton, to commemorate the part time, non-salaried great, on whose work they build. It is strange that in this nuclear age an old medieval ghost, "Town and Gown", should raise its head—for it is entirely debatable, even if possible, that a Closed Staff is desirable. There is too much to be said on the other side.

The practice of medicine is a way of life close to a religion. Its only excuse for being is that humanity suffers from a variety of ills and believes that from those men called physicians there is their best chance for help. The only possible excuse for the expense of medical education is that the sick may be healed. So, when an idealistic youth decides to enter the almost holy gates of medicine, he nearly always picks out a man he wishes to emulate. Many students are convinced they have a "call" or a certain fitness for some special department. They do not know that what they think of as "call" is the interest aroused in them by contact with a dynamic personality. The dynamic is much more likely to be met in the part time man who has achieved success in the outer world. Example: When Dr. Stuart McGuire was teaching, the majority of the boys thought they were especially fitted to do surgery.

The student expects to live in the outer world. The outer world of medicine in Richmond is best represented by the Academy of Medicine. A much closer association with this body will give more to the College than to the Academy. Any curtain between the two should be ruthlessly destroyed. For the Academy represents life in medicine, and as a great head master once said "A campus is not life, but only a preparation for living."

A short time ago I was in a glorious Cathedral in England. A verger came to me and said "You will have to move on now Sir, Matins start in ten minutes." To be asked out of a church because worship was starting struck me as absurd and positively irreligious. I wrote about this to a prominent churchman in England who replied "I know, the same thing has happened to me. The trouble comes from the fact that the majority of the men attached to Cathedrals have never been Parish Priests." Evidently, problems are not very original. They only change their clothes.

Tradition is a priceless heritage which bears strangely hard on him who comes from a place too young for tradition to form, and yet it is almost part of the breath of life to him who has always lived with it.

This place, the Medical College of Virginia, was the medical home of many who died for an ideal 100 years ago. Young men listened to the

thunder of cannon only ten miles away while they were attempting to concentrate on what a medical professor was saying. They were taking accelerated courses that they might meet the inevitable flow of wounded that would come back from the ring of battles, and did become a large factor in the organization of the Medical Service of the Confederate States Army. Their lives and their sacrifice molded a pattern which needs no exaggeration but is a form of treason to suppress. Individualism that comes from honest thinking and reverence for a living past is in no way a barrier to scientific attainment. But if this produces an individualism which is irritating to an outsider then so be it—for that is the way we are.

It is very odd that there has never been a chair of History at the Medical College of Virginia. This need not be limited to Medicine for enough major history has been enacted within the confines of its campus to keep such a department at work for years to come.

Just consider—the convention to ratify the Constitution of the United States was held here, and if this were all, it would be more than most institutions can boast about. The resurgence of the Episcopal Church from the separation with the Church of England started here at Monumental Church with the work of Bishop Channing Moore. His main opponents were the Baptists and one of the monuments to their efforts is the old Church building now used as a recreation center.

Further up the street is the Confederate Area. The White House of the Confederacy is still there, across the corner where McGuire Hall stands was the residence of the Vice-President of the Confederacy, Alexander Stephens, and across from it is the home of Matthew Fontaine Maury. These pavements echo the footsteps of those who were the actors in one of the great dramas of the world's history. Any one of these many spots deserves bowed heads.

This flame has been kept alight by the Academy of Medicine and its historical section. It's strange the College should be content that what some of its teachers do as a hobby, should not be done by the College professionally. But as a beginning, it is not out of place to suggest that the Stars and Bars be hoisted over the Egyptian building every working day of the College year.

*For, whatever it is and whatever it may be—This is the Medical College of Virginia, owned and operated by the State of Virginia. Situated in Richmond—sometime Capital of the Confederate States of America.*

THOMAS W. MURRELL, SR., M.D.

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# 1961—A Year of Vigorous Action by the A.M.A.

LEONARD W. LARSON, M.D.  
Bismarck, North Dakota

## *A brief outline of some of the activities of the American Medical Association and some of its future plans.*

LOOKING back over 1961, I am enthusiastic about the tremendous activity of the American Medical Association. Although we have been pictured to the public by our critics as a monstrous political lobby, our legislative interests actually comprise only a fraction of our yearly efforts. And even in Washington—contrary to popular delusion—we have opposed only a handful of bills compared to the dozens which we supported or presented disinterested testimony. In the 85th and 86th Congresses and the session that ended a couple of weeks ago, A.M.A. submitted 80 statements on bills and only 15 were in opposition to the proposed legislation.

Any time you hear someone going into that old routine about the A.M.A. being a bitter, reactionary political lobby trying to drag the country back to the days of Franklin Pierce, you might suggest that they get to know the A.M.A. better, or actually visit the A.M.A. headquarters in Chicago and see what goes on.

I'm going to sketch some of the major, non-legislative developments of 1961. I will stay away from both legislation and medical education, for my two fellow speakers (Dr. Howard and Dr. Wiggins) are certainly

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LARSON, LEONARD W., M.D., President, American Medical Association.

Presented before The Medical Society of Virginia, Richmond, October 10, 1961.

well qualified to discuss these in detail.

Perhaps some of the programs and activities I mention will be new to some of you. I hope that by discussing them, I will arouse your interest and participation. If so, my remarks will have been a success.

Your A.M.A. is constantly adding new programs to its immense activities. Some of the better publicized ones, for example, have been the seat belt campaign and studies on sports injuries, alcoholism, mental health, plastic bags, home and traffic accidents, accidental poisonings, infant mortality and morbidity, medical student recruitment, disaster medical care, nutrition and weight control.

In our constant effort to bring better health to America, we are always ready to assume medical leadership. Just this month we have stepped up several major projects. Most recent was the National Congress on Quackery, which met last week in Washington. This historic congress was co-sponsored by the A.M.A. and the U.S. Food and Drug Administration.

To those who say the A.M.A. is constantly battling the federal government, I point to this quackery congress as the best example of how closely the A.M.A. often works with government agencies. For years we have been cooperating with the F.D.A., the Fair Trade Commission, the Internal Revenue Service and the F.B.I. in the fight against medical fraud and quackery.

We also have worked with other groups such as the Better Business Bureau and the Chamber of Commerce to stamp out health swindling in America. I believe this national quackery congress will have results directly affecting many millions of Americans and every physician in the United States.

Perhaps the most important outgrowth

of this quackery congress will be to direct a powerful light onto the devious and shady activities of medical charlatans. Speaking for the A.M.A. at the Congress, I called for a nationwide campaign of public education to enlighten the people to the dangers of modern quackery.

The knowledge and work of this quackery congress will be used during the coming year by the A.M.A. and its members, by the F.D.A., by the Better Business Bureau, and by specific voluntary health agencies such as the American Cancer Society.

Another recent meeting with revolutionary long-range effects was our preliminary planning Conference on Mental Health held in Chicago 10 days ago. The purpose of this conference was to draw together some of the leaders in mental health to discuss the best possible program for the First Congress on Mental Health to be held sometime next spring. At this congress authorities from every aspect of American life will join in a vigorous effort to battle mental illness—perhaps our nation's most critical health enemy.

Already the A.M.A.'s mental health program is being felt in medical circles because more and more physicians are looking for embryonic signs of mental illness in their patients. It is our hope that every practicing physician—general practitioner, internist, pediatrician and gynecologist—will join the psychiatrists in this important work of early detection of mental disease.

During 1961 we have concentrated much energy on the need for professional and public education regarding mental illness. During 1962 this energy will be intensified, as the recommendations and decisions of the first congress are converted into action.

One of the most significant achievements of this year has been the A.M.A.'s cooperation with the federal government in the development of a medical self-help training program designed to train at least one member of each family in the United States how to survive a national disaster, and how to meet their own health needs if deprived of

a physician's services in a national emergency.

In addition to a new do-it-yourself medical advisor handbook, the formal medical self-help training course consists of 12 lessons to be taught in a 16-hour period.

All the state and territorial medical societies have been notified of the program and asked to assist and actively participate when called upon by the Public Health Service.

I want to stress the importance of the medical profession translating this program into action. Each physician must be thoroughly familiar with the program, and, through precept and example, must assist in teaching it to the public. Nurses, dentists, health educators and civic-minded citizens will be invited to participate. Our goal is to see the program activated as widely as possible through the Public Health Service Division of Health Mobilization, working cooperatively with local and state medical societies and other community agencies. We hope you will give it your full support.

Another important meeting this month is the A.M.A.'s Second National Congress on Prepaid Health Insurance, which will open in Chicago this Saturday. Physicians, insurance and Blue Shield executives, industry and labor representatives, and others interested in prepaid health insurance will meet to discuss problems and explore possible solutions.

Two subjects which will undoubtedly come up are (1) *use, not abuse*, of insurance, (2) *utilization of hospitals* as it involves both patients and physicians, and as it affects the entire system of voluntary prepaid health insurance.

Meanwhile, our projects, launched either last year or this year, are moving along well. For example, the perinatal mortality and morbidity study is progressing rapidly. In this long-term research study we are seeking to learn the cause of death and defects immediately before, during and after birth.

Since this study began, it received overwhelming acceptance and cooperation from

hospitals, their staffs, and physicians throughout the nation. Right now, the study is in pilot form, but we hope to expand it into a broad program and get significant results. I know you will agree that there perhaps is no greater tragedy than a significant birth defect. Annually there are about 250,000 newborn infants who suffer these defects. This tragic toll must be reduced drastically, and your A.M.A. hopes its program will be successful.

Of course, many of your A.M.A. activities and programs depend heavily on the support and cooperation—the extra push—of the profession. Without strong acceptance by state and county medical societies, the A.M.A. cannot function at its best in serving the American physician and the public, and in furthering the development of the art and science of medicine.

Ethical conduct is one of those continuing subjects that requires close attention from all of us at almost all times.

Our Department of Medical Ethics currently is in the process of carrying out the recommendations made by the Medical Disciplinary Committee at the New York Annual Meeting last June. This committee's historic report on the need for self-discipline was completed during 1961, but will affect the medical profession for years to come.

As you know, your Medical Disciplinary Committee recommended that the profession tighten up its self-policing, lest an outside agency seeks to do it for us. I am in agreement with the committee's report because I believe that one bad doctor is one too many.

During this past year, the A.M.A.'s scientific program was expanded, especially by the new research forum at the Annual Meeting. The Council on Scientific Assembly believes that each Annual Meeting should be highlighted by a research forum to give physicians the best obtainable information on original research.

This past year our council also agreed to sponsor a World Congress on Medicine and

Surgery, possibly in 1963, which will bring together under one roof leading scientists from all over the world.

These are just a few of the programs underway or about to be launched by the American Medical Association for the promotion of the art and science of medicine and the betterment of the public health.

There is one other area which I have not mentioned, yet which I believe is of urgent importance to every physician.

I believe that every physician should be a member of the American Medical Association. What I say is not a plea for compulsory membership. Rather, I believe that every man who holds a degree in medicine from a recognized university should be able to enjoy the privileges of A.M.A. membership if he so desires.

Right now, some state and county societies limit membership to physicians in private practice or to those licensed to practice in that particular state.

We all know of cases where a colleague may be an administrator, a medical director of a company, or perhaps even the dean of a medical school, and not be in private practice. Also we know of cases where physicians would like to belong to the A.M.A. but are unable to because they are not licensed to practice in that particular state. An example of the silliness of this was when a former General Manager of the A.M.A. found himself denied admittance to the Illinois Medical Society because he was not licensed in Illinois. Because of this, the general manager of the A.M.A. could not officially be a member of A.M.A. It took a special resolution by the state society to permit the top executive in the A.M.A. to become a member.

Many other states have similar outdated requirements, and I am not trying to single out any one state as a bad example.

I believe it is time for us to re-examine our membership policies, and do something for those doctors who would like to belong

to the A.M.A. but cannot for one reason or another.

I think that we all should remember that A.M.A. membership is extremely valuable to every physician because of the services received and the tasks performed for him by his Association.

Without a doubt, a member of the A.M.A. receives more value per dollar of membership duties than any other professional person would in his particular professional society.

To help physicians in their practice of medicine, the A.M.A. publishes 11 scientific journals and a medical newspaper (each member receives the Journal, a specialty journal and The A.M.A. News plus the popular magazine, Today's Health) . . . it sponsors two huge postgraduate meetings annually and many special symposia and conferences. . . . it maintains a physicians' question-and-answer service. . . . it provides early unbiased information on all types of new drugs. . . . it maintains extensive libraries and library lending services. . . . it provides office planning guides and practice aids. . . . it works in a thousand and one ways to serve the health and well-being of the American public.

Yes, A.M.A. membership is a definite

asset to every physician, and all of us should be looking for ways to extend the benefits and privileges of A.M.A. membership to all our medical doctors.

Today I have tried to give you a brief outline of some of our more important activities. Obviously, I have touched only a few, skipping many of the important ones such as international health, cost of medical care, health and safety education, drug information, and others.

However, I hope I have whetted your appetite to learn more details about our many programs. It is almost a platitude to say that our success in carrying out these projects depends entirely on the interest and activity of the membership.

Everyone of you should take part in some A.M.A. program, serve on a committee or attend the meetings. While 1961 has been a hectic, crucial year, I know that 1962 will be even more important to the medical profession. For this reason I urge your support of our A.M.A. and I plead for your participation.

The A.M.A. is only what its members make it, and you are its members.

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### Warning Signs in Stroke Victims

Warning signs are "far from rare" in persons who suffer strokes, according to an article in the November Archives of Neurology, published by the American Medical Association.

Of 120 patients whose medical records were studied, 19 gave a history of premonitory symptoms, Dr. Charles E. Wells, Nashville, Tenn., reported.

It is probable that the incidence of warning signs would have been even higher had examining physicians made a special search for them.

Headache was the most common warn-

ing symptom, appearing to be related to the subsequent stroke in 10 patients. In five of these patients, the headache was localized to the side of the head in which blockage of a cerebral blood vessel later occurred, and in the other five the headache was generalized.

Six other patients experienced various neurologic dysfunctions such as numbness, weakness, slurred speech and disorientation, he said. The other three patients described neurological symptoms in the days or weeks preceding the appearance of the stroke, but it was difficult to assess their significance.

# Cardiovascular Considerations

## Physical, Psychological and Physiological

ARTHUR E. WHITE, M.D.  
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*Cardiovascular diseases account for a high percentage of human illness and death. Some aspects of these disorders are considered here.*

EIGHTY-EIGHT PER CENT of all disabilities are chronic and will increase with our aging population. Sixteen million Americans are past 65 years and this number will reach 20 million by 1970.<sup>1</sup> Fifteen million eight hundred thousand are affected with diseases of the heart and circulation. Each year between 600,000 and 800,000 persons have an attack of myocardial infarction and about 200,000 die as a result. In nine out of ten the patient is between 40 and 70 years and often has hypertension and/or diabetes.<sup>2</sup> Over one million Americans are suffering from the sequelae of impairment of the vascular supply of the central nervous system.

The functional or vasomotor conditions as well as the organic or structural alterations of the cardiovascular system must be kept in mind. It has been known for many years that bodily functions are disturbed by emotional stress.<sup>3</sup> For example, it has been demonstrated that there is an increase in depth of respiration during unpleasant thoughts,<sup>4</sup> and pronounced vasoconstriction following deep inspiration.<sup>5</sup>

Presented at the annual meeting of the Virginia Section, American College of Physicians, Alexandria, February 18, 1961.

Other manifestations which are frequently noted are tachycardia following emotional experiences; sudden hypertension or pallor and syncope with fear; angina pectoris with excitement and sustained hypertension with prolonged anxiety. Psychic trauma may act as the precipitating cause of heart failure.<sup>6</sup> Thus one must say the cerebral cortex must be considered along with the thyroid, the adrenal cortex and the pituitary, as potentially controlling cardiovascular responses in man.<sup>7</sup>

By usage, the term "peripheral vascular disease" is limited to conditions in which the blood flow through the extremities is disturbed by structural or functional abnormalities of the peripheral blood vessels.<sup>8</sup> This should include the lymphatics as well as the arteries and the veins.<sup>9</sup> Broadly speaking, the term should include diseases of all vessels distal to the heart.<sup>10</sup>

In many disturbances of peripheral vascular disorders the primary condition may or may not be peripheral or may or may not be vascular. Raynaud's phenomenon, for example, may be caused by a cervical rib, or secondary non-inflammatory lymph edema may result from compression of a main lymphatic trunk by a neoplasm or the formation of a scar after surgery, and thrombophlebitis may result from prolonged bed rest with associated infection. Slight trauma may elicit symptoms of latent peripheral arteriosclerosis. A large portion, up to 70%, of an arterial lumen can be obliterated by a plaque before symptoms occur.<sup>11</sup>

The incidence of myocardial infarction is more than twice as high in ulcer patients fed Sippy and similar diets than in those not

given diets high in milk and cream as in non-ulcer patients.<sup>12</sup> It has been said "An outstanding feature of modern medicine is its physiological foundation."<sup>13</sup> These factors have made it possible for the statement, "Apparently a man may now live to be older than his arteries."<sup>14</sup>

## Physiology

Physiology is a science that studies the phenomenon occurring in living organisms and endeavors to establish their laws. Cellular nutrition demands a continuous supply of nutritive substances and the subsequent removal of waste products. A small but definite reduction in cerebral oxygen uptake occurs in healthy aged persons compared with healthy young adults and uptake is significantly lower in senile demented persons than in young or old persons in good health.<sup>15</sup>

The pressure exerted by the blood on the walls of the blood vessels is determined by the cardiac output in unit time and the peripheral resistance to its circulation. The velocity at which the blood circulates is dependent upon the vascular bed. The walls of large arteries have great strength and elasticity; during systole they store a part of the systolic energy by converting it to tension which is reconverted into kinetic energy during diastole. In small arteries, contraction and relaxation of the muscle coats is under the control of nervous and humoral factor which regulate the inflow of blood to the different tissues according to their physiological need. The arterioles are in a permanent state of constriction, governed by nervous and humoral mechanisms, that are essential for normal blood pressure.

Therefore variations in cardiac output or peripheral resistance alter blood pressure. Cardiac fluctuation in blood pressure is the variation in ventricular systole and diastole. Breathing also results in variations in blood pressure. A third type of variation in blood pressure is the result of vasomotor fluctua-

tions and is demonstrated with the plethysmograph as shifting of measurable quantities of blood from one part of the body to another. The plethysmograph volume deflections are referred to as cardiac, pulse, alpha, beta and gamma. The latter three are manifestations of the blood within the blood vessels, inter and intracellular fluid and lymph within the lymphatics<sup>16</sup> and may serve as an index of physical states,<sup>17</sup> emotional states and types of personality.<sup>18</sup>

The hemodynamic changes appropriate to situations requiring an increased peripheral circulation, such as anemia, vitamin deficiencies, arterio-venous shunts and hyperthyroidism, include tachycardia and increased stroke volume with a lowering of peripheral resistance.<sup>19</sup> During blood loss, as in donors for transfusion, an increase has been observed in peripheral resistance without increased cardiac output.<sup>20</sup> These changes are typical of those encountered in essential hypertension.

Gordon<sup>21</sup> noted that in ascites due to cirrhosis without renal pathology the intra abdominal pressure was transmitted to the intra abdominal veins. Paracentesis caused a fall in these pressures and resulted in the absorption of leg edema.

The physiology of electrolytes and fluids has disclosed that all membranes are permeable to water and to many substances of small molecular size. Variable semi-permeability of different cellular and endothelial membranes to the passage of organic and inorganic solutes leads to differences in concentration and composition of the subdivisions of the body fluids. Thus, the capillary endothelium is relatively impermeable to the passage of the plasma proteins, but permits free passage of the other constituents, with the exception of the lipids.<sup>22</sup>

In cardiac patients, electrocardiographic manifestations of digitalis toxicity have been observed to respond to concurrent administration of organic potassium salts, with marked improvement in cardiovascular states.<sup>23</sup>

Nutritional, hormonal, circulatory and nervous factors influence potassium uptake by the tissues. Marked degrees of potassium deficiency produce weakness of extremities and respiratory muscles, tachycardia and even flaccid paralysis. Increased excretion of potassium in the urine is found as a result of increased tissue breakdown associated with infection, tumors, diabetes, starvation or as a response to stress such as operation or trauma.<sup>24</sup>

In vomiting more chloride is lost than sodium; on the other hand, diarrhea leads to a greater depletion of sodium and other bases than of chloride.

### Cerebrovascular Considerations

Although cerebrovascular accidents comprise the most frequently encountered disorders of the nervous system, there is still considerable uncertainty regarding the basic pathophysiologic mechanism responsible for their causation.<sup>25</sup> Inability to demonstrate occluded or ruptured cerebral blood vessels at autopsy in many cases of apoplexy has suggested the defect may be due to local dynamic changes in blood vessels such as vasospasm or vasoparalysis and/or circulatory insufficiency associated with disorders of the cardiovascular mechanism.<sup>26</sup>

Hemorrhagic manifestations are common in acute leukemia, and intracranial hemorrhage may be the cause of death in 25% of the patients with this disease.<sup>27</sup> Seventy per cent of patients that suddenly develop leukocyte counts above 300,000 per cu. mm. develop what is termed "blastic crisis" and post mortem studies reveal leukocyte stasis, necrosis of the vessel walls and cerebral hemorrhage.

Temporary unexplained blurred vision in both eyes or episodic diplopia and nystagmus may be early symptoms of cerebral arterial insufficiency. Sudden, simultaneous development of bilateral homonymous defects of the visual field and nystagmus or inter nuclear ophthalmoplegia are pathognomonic of the vertebral—basilar arterial system.<sup>28</sup>

Occlusion of the carotid artery can be determined in about 80% of patients without cerebral angiographic study.<sup>29</sup> Ophthalmodynamometric examinations in one series revealed reduced retinal artery pressure on the side of the occlusion in 44 out of 57 patients and palpation of the internal carotid artery in the posterior pharynx reveals an absence of the pulse in 10 of 24 patients.

Severe headaches unilateral or bilateral which appear in the space of a few hours with pain in the scalp and over the temples, rather than in the cranium warrant consideration of giant cell arteritis and if untreated may develop ophthalmoplegia and visual failure.<sup>30</sup> Commonest symptom of impending visual loss is the sudden occurrence of a mist or brown veil over whole or part of the field of one eye. Steroid therapy during the headache stage prevents visual failure.<sup>31,32</sup> Temporal arteritis, therefore is a misnomer in that it is a part of a generalized cranial arteritis.<sup>33</sup>

### Vascular Considerations of the Extremities

When phlebitis of the veins of the arm and axilla after radical mastectomy occurs the edema produced is proportional to the vein and lymphatic obstruction. Early diagnosis of phlebitis is important because anticoagulation with fibrinolysis therapy is effective. In untreated cases fatal pulmonary embolism may result.<sup>34</sup> The signs of thrombophlebitis after radical mastectomy are soreness along the brachial vein, swelling of the upper arm, visible collateral veins and lymphatics, and pain when the vein is stretched by extending the elbow.

Primary Raynaud's disease and Raynaud's phenomenon secondary to other pathologic states can be explained by the interrelation of vasoconstricting serotonin and vasoactive amines.<sup>35</sup> Exposure to cold results in peripheral vasoconstriction obstructing blood flow in the small vessels and destroying some blood platelets, thereby releasing serotonin which reverses the vasospasm. As the vas-

cular tone resumes equilibrium, the symptom complex abates.

Treatment directed toward primary Raynaud's disease is extremely varied. Avoid exposure of the hands to cold, vasodilating drugs and cold desensitization by carefully controlled contrast baths usually alleviates the painful symptoms.<sup>36</sup>

The literature has been filled for many years with reports about organic occlusive arterial diseases and thrombosis of the lower extremities. Some have relegated vasodilator drugs to an insignificant position in the treatment of occlusive arterial disease.<sup>37</sup> Yet an overall therapy program includes combating vasomotor tone or secondary vaso-spasm, anticoagulants and improvement in collateral circulation by the patient's adjustment to exercise limitations.

The patient with intermittent claudication may be relieved by walking more slowly or even by having a half-inch lift on each heel thereby putting more work on the thigh muscles and less on the gastrocnemius in ambulation. Only a small percentage of patients with intermittent claudication will require surgery; vasodilator drugs and advise on care of the legs and feet will usually suffice.<sup>38</sup> Even when there is resistance to vasodilator drugs, sympathectomy and other therapies to increase circulation, a reduction from the normal rate of 120 steps per minute to 90 or even 60 steps per minute may enable the patient to walk longer distances without developing calf muscle pain. Often the reduced rate will permit the patient to walk indefinitely.<sup>39</sup>

A recent test advanced for the detection of intermittent claudication is that at rest the pedal arterial pulse is usually easily palpable and disappears with exercise.

Thromboangiitis obliterans as described by Buerger is rarely, if ever, seen as a specific acute arterial lesion. The intermediate and healed lesions are morphologically indistinguishable from atherosclerosis.<sup>40</sup>

Thrombus formation in the lower extremities is recognized as the most common

cause of pulmonary embolism.<sup>41,42</sup> Therefore the prevention of thrombus formation is most important. It has been written "The greatest single factor favoring thrombus formation in the lower extremities is sudden confinement to bed of a previously ambulatory older patient without the benefit of active exercise or the aid of gravity in the maintenance of an efficient circulation."<sup>43</sup>

Since anoxia is a likely cause of change in the vessel wall, stasis should not be allowed to occur. Even seemingly trivial factors such as chilling, cramped position and smoking should not be dismissed lightly. In addition to foot and leg exercises and elastic stockings, we must never forget that deep breathing increases the negative pressure in the thorax thereby aiding the emptying of the large veins.

All too often life saving acute medical and surgical intervention is in turn followed by a convalescence which is allowed to run its course in fatalistic and negative observation, all reverses and complications being attributed to the age and infirmity of the patient.

Arteriosclerosis is not the inevitable "rusting out" of the arteries in old age but is a metabolic disorder the result of a triad of complex factors.<sup>44</sup> The first is the high fat, high cholesterol diets. The second is the constant disorder in blood lipids and lipoproteins which are regulated and controlled by the liver, and third, the endocrine system. Thyroid hormone, estrogens, and androgens are known factors in the regulation and control of arteriosclerosis.

### Abdominal, Pulmonary and Cardiac Processes

Intraperitoneal and retroperitoneal bleeding from rupture of diseased arteries is commonest among persons more than 50 years old with arteriosclerosis of the major arteries. The onset may be dramatic and quickly becomes an acute surgical problem.

The oxygen in arterial blood is needed in the intestine to maintain secretory activity,

muscle tone and peristalsis. In patients with occlusive arterial disease these functions are diminished with consequent gastrointestinal disturbances. Loss of secretory activity produces anorexia. Loss of muscle tone causes distention of bowel and expansion of gas. When the circulatory deficiency increases, peristalsis is inhibited, constipation progresses to obstipation, intestinal obstruction and defective fat absorption.<sup>45</sup>

Physiologically the effects of pulmonary diseases on circulation are due: (1) to anoxia which imposes a greater strain on both the right and left ventricles but more on the right; (2) to acidosis which imposes equal strain on the right and left ventricles because of the overload of carbon dioxide which in turn means more units of blood must pass through the tissues per unit of time and; (3) to primary disorders such as pulmonary arteriosclerosis which increase pulmonary arterial pressure placing a strain on the right ventricle, and chronic pulmonary fibrosis which results in bronchial arterial hypertrophy and increases the strain on the left ventricle since the bronchial arteries originate from the aorta.

The treatment of pulmonary embolism with infarction falls into two classes—prophylactic and active. The prevention is usually achieved by combating the factors that favor the development of emboli; namely slowing of the circulation and increase of the clotting tendency of blood. Therefore a certain amount of movement favors the maintenance of an adequate circulation such as early ambulation, deep breathing exercises, ankle and toe exercises and frequent changing of position. Heavy sedation, constipation and abdominal distention also are factors that slow down the circulation.

In a recent report on 444 men and 121 women that had suffered from angina pectoris and myocardial infarction, many surpassed the normal life expectancy. Of the 270 alive at the time of the report, the mean survival since onset of the disease was eleven

years and the 295 who had died averaged nine years for the men and seven years for the women.<sup>46</sup>

It has been noted that the emotional attitude is an important factor in recovery after a coronary occlusion. The patient with a healthy ego will pass through a period of overwhelming anxiety when faced with the threat of sudden death, but in time he will accept the reality of his condition and adjust to it. Not so the patient with a weak ego who may become a neurotic invalid or conversely deny his illness. The physician who surrounds the patient with precautions and restrictions encourages him to remain an invalid.

Calculated intermittent exercise not to exceed four calories per minute will improve collateral circulation in the myocardium and increase plasmin serum levels, thus aiding in dissolution of blood clots.<sup>47</sup> A cardiac may work periodically over a long time without danger, whereas the same amount of work done in a shorter period by sustained and intense effort might be fatal.

Despite existing uncertainties and limitations the out-dated policy of immobilizing the cardiac patient has been replaced by a much more rational and courageous attitude.<sup>48</sup>

### Hypertension

The present concept of hypertensive cardiovascular disease is based upon antihypertensive drugs of long term effectiveness, increased information concerning mechanisms of blood pressure regulation and the recognition of two more types of secondary hypertension: that is primary aldosteronism and occlusive renal arterial disease.<sup>49</sup>

The adrenal hormone aldosterone does produce effect upon both sodium and potassium metabolism. Through this study it has been ascertained that in benign essential hypertension the aldosterone secretion response to sodium deprivation is normal and dependent upon the potassium balance, the same as in normal persons. In malignancy hypertension there is an increased secretion

of aldosterone and it is not modified by changing the sodium intake. However, it is related to potassium balance.<sup>50</sup>

This added knowledge makes it possible to say that hypertension can usually be controlled if discovered early, and if treatment is begun early and continued on a long-term basis.<sup>51</sup>

## Conclusion

The treatment of cardiovascular conditions should be based on such time proven methods as diet, drugs, bed rest, surgery and supervised passive and active exercises. Yet the patient must be considered as a whole. The correction of psychological, social and vocational problems may be as important as the medical and surgical therapy.

The deleterious results of inactivity are manifested in many ways. The dramatic pulmonary embolus is only one such result, atrophy of disuse is another. Inactivity, if prolonged and complete, may produce a psychically disturbed individual.

This was amply explained by Dr. Benjamin Rusk, a signer of the Declaration of Independence, who wrote in 1812 "Man was made to be active. Even in paradise he was employed in the healthy and pleasant exercises of cultivating a garden."<sup>52</sup>

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## Detergent Food

"Detergent food" can help clean your teeth, according to Philip L. White, Sc.D., secretary of the Council on Foods and Nutrition of the American Medical Association.

The "detergents" are crisp, crunchy, low-carbohydrate foods such as celery, carrot strips and radishes, he explained in the October Today's Health magazine, published by the AMA.

"Dentists and physicians are quite concerned with sticky, high-carbohydrate foods that adhere to the teeth. Such foods are quickly acted upon by the bacteria commonly found in the mouth, and the acids produced during this bacterial digestion can etch the enamel and thus produce a site for decay to begin."

Chewing "detergent food" can do much to remove sticky foods from teeth.

# Thomas Linacre and John Caius

## Medical Humanists of the Renaissance

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*These men were widely known during their lives and exerted considerable influence on medicine of their day.*

MEDICINE, like many other subjects, had its Humanists. I would like to discuss the lives and works of two of these Humanists, Thomas Linacre and John Caius, using the term Humanist to describe those who brought Greek and Roman classics into vogue during the Renaissance. It is of interest that these two men, born fifty years apart, one working at Oxford, the other at Cambridge, had comparable training and influence. Thomas Linacre, educated at Oxford and Padua, was founder and first president of the Royal College of Physicians, was physician to Henry VII and VIII, and translator of many medical classics from Greek to Latin. John Caius, educated at Cambridge and Padua, was physician to Edward VI, Queen Mary and Queen Elizabeth, Master of Gonville and Caius, and also translator of many medical classics.

The exact date of birth of Thomas Linacre is unknown but it is generally considered to be around 1460. Early in life he came under the influence of William Selling, a graduate of All Souls College of Oxford and trained in Greek at Bologna. Linacre received excellent training for that day in both Greek and Latin before entering Oxford and continued their study at Oxford.

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Read before the Pundit Society, University of Virginia, December 16, 1960.

In 1484, he was elected a Fellow of All Souls College and, in the following year, accompanied his former tutor, William Selling, on a tour of Italy. In Italy, Linacre became interested in medicine and enrolled in the Medical School of Padua, the most outstanding medical school of that time. In the archives of the University of Padua there is a note that Thomas Anglicus received his Doctor of Medicine on August 30, 1496. In addition, in Florence, he continued his study of Latin and Greek, and in Venice, he aided the great editor and printer, Aldus. In the Aldine edition of Aristotle, 1497, there is a tribute to Linacre's scholarship, for there is an acknowledgement to "Thomas, an Englishman, most learned in both Latin and Greek". He also translated Proclus "On the Sphere" which was published by the Aldine Press, 1499.

On his return to England, Linacre accepted a post at Oxford, not as a doctor of medicine but as a Greek Scholar. Here, he was friendly with Erasmus, the theologian.

Erasmus considered Linacre one of the few men in England capable of translating Greek and stated that his Greek was better than his medicine. Erasmus, however, on becoming ill, did call in Linacre as his doctor. In 1501, Linacre was invited to act as tutor to Prince Arthur, son of Henry VII and was also appointed physician to Henry VII. About this time, consideration was being given in England to standards for doctors and the need for a license system. Through Linacre's influence with the King, an act was passed in 1511 to the effect that no one could practice medicine within seven miles of the City of London without a license. Later it was modified to include all

England. The license, however, was given by the Bishop of London or the Dean of St. Paul's Cathedral. Later, after the foundation of the Royal College of Physicians, this privilege passed to that body but the church still retained partial control. In fact, the Archbishop of Canterbury continued to license physicians in England until 1880. These licenses were called a Lambeth M.D. after the name of the official home of the Archbishop, Lambeth Palace.

Linacre was elected first president of the Royal College of Physicians and devoted much time and his personal fortune to this group. Later in life he became very interested in theology and was ordained a priest in the Catholic church. Now he had the time and freedom which he used to translate medical classics from Greek to Latin. His first medical translation was Galen's "On the Preservation of Health", published in Paris in 1517. Later Siberch published his translation of Galen's "On the Temperaments", Cambridge, 1521, and Pynson, a printer in London, published his translation of Galen's "On the Natural Faculties", and Galen's "On the Interpretation of the Pulses", in 1523. Pynson was an apprentice of William Caxton. Not much is known of Siberch. He appeared suddenly in Cambridge, printed a few books and then disappeared. Linacre also published two Latin grammars, which were standard for more than a century. It is stated that he was the person ? for Robert Browning's poem "The Grammarian's Funeral".

"So with the throttling hands of Death  
at strife,  
Ground he at grammar:  
Still, through the rattle, parts of speech  
were rife,  
While he could stammer."

Linacre's influence on the progress of medicine was very great. For the first time, students had translations of the classic texts of medicine directly from the Greek to the Latin. No longer were they dependent on the corrupt texts which had come down

by way of the Arabian physicians. For example, in the library of Nicolaus Pol, a doctor of the 15th Century, whose library of 467 volumes is still intact, there are numerous volumes of Arabian origin. It was stated of Linacre's translations that Galen spoke better Latin in Linacre's translations than he did Greek in the original. The foundation of the College of Physicians in England under the guidance of Linacre played an important role in the development of English medicine, for it became the body for the license for practice and thus controlled the standards of the English physicians. Also, he endowed three lectureships of medicine, two at Oxford and one at Cambridge. Sarton in his Ancient and Medieval Science during the Renaissance, states that every literate doctor in Western Christendom knew of Linacre. He was a distinguished physician, a great scholar and a good man.

John Caius, the second of the Medical Humanists, was born at Norwich in 1510. His name appears in many forms; Keye, Kees, Kay and Caius. It is generally given in the Latin form, Caius, but pronounced Keys. He, like Linacre, was influenced in his early studies by an instructor who knew Greek as well as Latin. He entered Gonville College, Cambridge, in 1529 and continued his study of Greek. In later life he wrote a glowing account of his student days in which long-gowned students interested not in games but in critical attendance of classes, never missed a public lecture nor visited a public house and spent what little money they had on books. Their only idea of relaxation was the preparation of Latin plays for the Christmas holiday. He received his B.A. in 1532 and was elected a fellow of Gonville in 1533. In 1539, he went to Padua in order to study medicine. Here he was a fellow lodger with Vesalius who was engaged in his great work "De Fabrica Humani Corporis", the publication of which revolutionized anatomy. After graduation, he remained at Padua lecturing on the Logic and Philosophy of Aristotle, giving these lectures in classic Greek. He then made a

tour of Italy examining the Greek manuscripts of Galen and Hippocrates. On his way back to England he became acquainted with Conrad Gesner, the great naturalist of Basle. After his arrival back in England, he started to practice medicine in London. He was very successful in his practice, being elected president of the College of Physicians and was the physician to King Edward VI, Queen Mary and Queen Elizabeth. He restored the tomb of Linacre and composed a suitable epitaph for this tomb. He introduced the study of anatomy into England, carrying out public dissections.

On paying a visit to Cambridge, he found his old college, Gonville, in a very poor state; financially, physically and intellectually. He decided to create a new college by giving considerable money to Gonville. On account of his gifts the College was renamed Gonville and Caius College and Caius was made master. Thus the problem of selecting a master was easily settled. As master, he reformed the intellectual standards and started considerable rebuilding. He had a court constructed with one side left open, the idea being that it was healthier to have the breezes blow into the open court, than to have it closed on all four sides. He was fond of symbolism and had three gates constructed, called Virtue, Humility and Honor. The gate called Honor is opposite the Senate House and all the students of Gonville and Caius going to the Senate House for their degrees must pass through this gate of Honor. Also, if a fellow dies, he is carried out through this gate, thus leaving the College through Honor. A silver caduceus, given by Caius to the College of Physicians and later transferred to the college is still laid on its original cushion on feast nights. "We give thee," said Caius, "the Cushion of Reverence, We give thee the Rod of Prudent Government." He was very strict and set up rules for admission in which no persons should be admitted who were "deaf, dumb, deformed, lame, chronic invalids or Welshmen." If his Fellows did not agree with him, he either expelled them or

put them in stocks. In spite of his actions, his influence attracted to his college many young men who entered medicine. For example, Harvey, the discoverer of the circulation of the blood was a Gonville and Caius man. Today, Gonville and Caius is known as a training college for medicine and many of the famous doctors in England received their early training in this college; for example, Sir George Paget and Sir Clifford Allbutt. Caius, like Linacre, was very active in translating the works of Galen from Greek manuscripts into Latin. Four such texts were published, three at Basle (1544, 1549, 1557) and one at Louvain (1556). In addition he published an account in 1552 of the "Sweating Sickness", a plague which visited London.

The title of this book is "A Boke, or Counseill against the Disease commonly called the Sweate, or Sweatyng Sickness—very necessary for everye personne". This account is a classic and is the only description of this epidemic. He also published a book on "British Dogs" (London, 1570) in which he gives a detailed description of the British dogs of that day. The English edition (1576) has the title "Of Englishe Dogges, the diversities, the names, the natures and the properties". It went through several editions and was reprinted in 1880. In addition, he published a book "On the Pronunciation of Greek and Latin", (London, 1574).

Then, as now, there was considerable discussion as to the age of Oxford and Cambridge Universities, each claiming that it was the older. Caius entered this discussion by claiming that Cambridge was founded by a Spanish noble, Cantaber, in 375. I do not think that anyone in Oxford tried to establish an earlier date for their University. There have been attempts to relate Caius to the Dr. Caius in "The Merry Wives of Windsor" but these attempts have not been very successful.

In his later life, he was accused of being a Catholic. His room was raided and Catholic vestments were found in his possession.

His defense was that there had been so many changes in religion that he disliked throwing the garments away because they might be useful in case of another change. However, he was forced to give up his mastership and he returned to London. Caius probably never met Linacre. Caius returned to England in 1544 or 1545, 20 or 21 years after Linacre's death.

Caius has one of the shortest epitaphs, composed by himself, on his tomb, "Fui Caius" (I was Caius).

It is obvious from this description that these two men had comparable training and experience. Their influence was great and lasted for many years. The students of medicine used their translations of Galen as text books which ran through many editions. It was not until the rise of the experimental method in the seventeenth century that their translations of Galen's work ceased to be useful as medical texts.

Osler was very interested in both of these men and may have been influenced by their lives. He wrote an interesting account of the life of Linacre. Osler was trained in the classics, collected a remarkable library of books illustrating the history of medicine, was president of the British Classical Asso-

ciation, was fond of quoting Galen and Hippocrates and was religious by nature. In fact, one could draw certain relationships between his life and that of Linacre and Caius.

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### Stomach Checked By Swallowing Tiny Radio

A tiny radio device which can report on the acidity of the stomach after it is swallowed was described in the November 25th Journal of the American Medical Association.

An electrode sensitive to acidity is connected to the capsule radio which transmits an FM radio signal, according to Edward H. Storer, M.D.; David T. Dodd, M.D., Peter A. Snyder and Charles O. Eddlemon, B.S., University of Tennessee College of Medicine, Memphis, Tenn.

"The signal is transmitted at 9.6 megacycles at a power of about one milliwatt. Because of the very short range of the signal, a circular receiving antenna coil is worn like a belt by the person being tested. A

signal . . . can be picked up by a suitable receiver at distances up to three feet from the antenna." Although the device is "still very crude", it demonstrated that the principle is sound.

The present device is "too large to be swallowed by anyone except a dedicated investigator". However, it is hoped that the need for batteries can be eliminated and other components can be further miniaturized so that the capsule can be swallowed without discomfort.

The device was developed as a better method of determining stomach acidity, which has an important relationship to peptic ulcer and stomach cancer.

# Rhinoplasty

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*The rhinologist by training and experience is in the best position to perform rhinoplasties.*

THE TECHNIQUE of routine rhinoplasty was given to medicine by a German orthopedic surgeon, J. Jacques Joseph, in the early 1900's. Since this time Joseph's operation has been modified by various groups of specialists to suit their individual interests. Rhinoplasties are now being done by orthopedists, dermatologists, general surgeons, plastic surgeons and rhinologists. All have contributed something toward improving Joseph's original procedure.

At the present time in this country, more rhinoplasties are done by rhinologists than any other specialty group. Since the rhinologist follows his patient's nasal health over a period of many years, he is in the best position to properly evaluate rhinoplasties. He knows that physiological surgery bears the test of time, whereas cosmetic surgery may not. The young adult, who sincerely desires a hump removal, will be satisfied with a routine rhinoplasty as long as he or she has a satisfactory cosmetic result, almost regardless of how well the nose functions. As the patient grows older, however, he becomes more and more conscious of disturbances in function. He frequently is troubled by nasal obstructions, difficulties with respiration, headaches and disturbances with sleep. This has led rhinologists to combine rhinoplastic procedures with other rhinologic operations and thereby, to develop surgery

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President's Address, Virginia Society of Ophthalmology and Otolaryngology. Williamsburg, Virginia, 1960.

that not only improves the appearance of the nose but improves the function as well.

A rhinoplasty can be divided into a number of distinct and separate surgical procedures:

- A. The incisions.
- B. The uncovering of the cartilaginous and bony pyramid.
- C. The removal of a hump.
- D. The medial osteotomies (i.e. separation of nasal bones)
- E. The lateral osteotomies.
- F. The uncovering of the lobular cartilages.
- G. The shortening of the nose.
- H. Etc.

These procedures are almost all blind procedures. Most are done through a small, distant incision and entirely by feel with both the operating hand as well as the opposite hand. One must know the feel of a knife in a surgical plane, and the feel of periosteum being stripped from bone, the feel of perichondrium being elevated from cartilage. He must be able to tell if the dissector is truly on cartilage or bone or if there is an intervening layer of fibrous capsule.

Most rhinologic surgery is done under these same conditions. The septal operations, the ethmoidectomies, the intranasal antrostomies, the sphenoidal or frontal operations, essentially all intranasal procedures, are more or less blind, and done by feel. This makes most of the rhinoplastic procedures come easily to the competent otorhinolaryngologist.

The septum has correctly been called the keystone of the nose. It is not only the keystone of the external pyramid but the key to many functions of the nose.

The Killian submucous resection is not the answer to many problems revolving

around the septum. More extensive septal surgery combined with external pyramid surgery is often required. Any surgeon doing septal surgery should be familiar with rhinoplastic procedures, and certainly any who are doing rhinoplastic operations should be thoroughly acquainted with the problems of the nasal septum and especially with its relationship to the rest of the exterior of the nose from a medical as well as surgical viewpoint.

Hilgar in the May-June issue of the Transactions of the American Academy of O & O, 1952, wrote "The problem of architectural nasal obstructions had largely resolved itself into the proper surgical correction of the anterior third of the nose and septum. Rhinoplastic surgery has a physiologic as well as a cosmetic responsibility. The basic science of the region and the problems of surgical techniques are those best known to the rhinologists."

The rhinologist is taught that, in this work, a rhinoplasty is not a hard and fast routine procedure. On the contrary, there are many rhinoplastic procedures, and they may be juggled about and used in many arrangements to help him design the operation best suited to the problem.

The assembling of these procedures into a simple rhinoplasty becomes a relatively easy problem. The really difficult part of a rhinoplasty, however, is not the surgical technique, but one of surgical judgment. Here one's knowledge of the physiology of the nose becomes most important. He has to decide whether the proposed surgery, besides improving the patient's appearance, is going to help or certainly not hinder the function of the nose.

Any surgery that involves changing an individual's appearance must be approached with extreme caution. This cannot be over-emphasized and for this reason every effort to get to know your patient really well and to develop a healthy doctor-patient relationship is very important. The taking of photographs, making of masks, etc., help

you to learn how your patient reacts to abnormal circumstances.

From the psychological viewpoint the nose plays a special roll in the structure of the body image. It is the most conspicuous structure in the human body. It is never covered by clothes. The patient who develops an obsession relative to the nose is particularly plagued because of the conspicuousness of this organ.

Certain contours of the nose will often indicate its owner's ethnic origin, i.e., Roman, Semitic, Oriental or Negroid, etc. Very frequently nasal deformities due to injuries may result in a nose which does not "belong" to that individual and which may result in a psychiatric syndrome of the nose.

Of extreme importance is the fact that the nose possesses secondary sexual characteristics. At puberty it begins to assume a structure which is capable of being distinctly feminine or masculine in its contours and proportions.

In patients in whom there already exists a distortion of the body image based on difficulties in sexual identification, a change in contour of the nose can be a critically disturbing force, complicating an already difficult sexual problem.

Our residency training at the Medical College of Virginia, illustrates the rhinologist's approach to rhinoplasty. The new resident is taught first the physiology of the nose, the value of a firm septum, the importance of resistance to breathing, the importance of the nasal valves and of the many baffles. Surgery of the septum includes everything from removal of a spur, to total removal of the septum.

The resident is taught that through the septal incisions medial osteotomies may be done and, when indicated, implants to the dorsum inserted. The base of the nose can be undermined through this incision and many procedures around the nasal spine or floor of the nose can be accomplished.

He is shown that minor manipulations to both the upper and lower lateral cartilages can be done, together with the septal

surgery, through the same incision. The septum and thereby the nose, can be shortened through this incision.

Surgery of the lateral walls of the nose can be best approached through alae incisions. Through this same incision the resident is taught to do lateral osteotomies not just for rhinoplasties but for many conditions, such as the smalling operation for atrophic rhinitis. Inter-cartilages and rim or slot incisions are taught as another approach to the bony and cartilaginous vaults and to the lobule. In other words, most all of the rhinoplastic procedures are taught separately, in connection usually, with some rhinological problem other than rhinoplasty. The average resident, even after he has learned all the surgical anatomy, physiology and surgical techniques, is still not prepared to do rhinoplasties "per se", until he has spent many thousands of hours looking at and studying noses (all shapes, sizes, and colors). It has been said many times that it takes a minimum of five years of constantly looking at, working with, or operating on noses before one begins to be com-

petent in his work. I have certainly found this to be true.

In conclusion, to quote Cottle (from his Introduction to Fundamentals of Reconstructive Surgery of Nasal Septum and External Nasal Pyramid), "The Rhinologist in rhinoplasty has a sphere very definitely his own. This sphere of interest originates in his fundamental teaching in the basic sciences of otolaryngology and enlarges from his studies and experiences in septum surgery, sinus surgery, nose and ear disease and the consideration of the whole problem of nasal obstruction. His eventual achievement must be a broad conception of nasal physiology upon which to predicate his further medical and surgical practices. The rhinoplastic (plastic) surgeon on the other hand has his origin in general surgery and comes to rhinoplastic procedures through his work in total and partial reconstructive and replacement surgery. Thus these two specialists meet in a similar field but from two widely different points of view."

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### Eye Exam and Cardiovascular III

A sign of hardening of the arteries may be detected in a routine eye examination in persons who have no other symptoms of the disease, according to Dr. Robert W. Hollenhorst, Mayo Clinic, Rochester, Minn. Dr. Hollenhorst, writing in the October 7th Journal of the American Medical Association, reported the observation of bright-colored patches in the blood vessels of the eyes of 31 patients. In all of the patients subsequently examined for the vascular ailment, the disease was confirmed.

The plaques probably are crystals of cholesterol transported to the retina of the eye from diseased sections of arteries.

Through an ophthalmoscope, the plaques appeared orange, yellow or copper in color. From one to several dozen were seen in each patient. The plaques were seen mostly in elderly patients, in whom a degree of hardening of the arteries is to be expected.

The possibility of hardening of the arteries should be investigated in all patients in whom such plaques are observed.

# Treatment of Ambulatory Patients with Fluphenazine Dihydrochloride

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*This recent addition to the group of phenothiazine compounds has certain advantages. Not only is it effective but side effects are unusual. The single daily dose is quite small.*

SINCE 1954, when the first reports appeared in the American medical literature on the use of chlorpromazine in the treatment of mental disorders,<sup>1-3</sup> at least ten members of the phenothiazine group of compounds have become available for use in psychiatric practice.<sup>4-5</sup> These compounds differ in chemical structure from chlorpromazine and from each other only in the identity of the halogen attached to the nucleus and the chemical nature of the side chains.<sup>4,6</sup> All of these phenothiazine derivatives possess certain pharmacological properties which are characteristic for the group<sup>4-6</sup> though distinct differences between them have been demonstrated in clinical use, not only as regards their therapeutic effects, but also with respect to their toxic and side effects.<sup>4,5,7</sup> One of those phenothiazine derivatives most recently introduced to psychiatry is fluphenazine dihydrochloride\* which has a trifluoromethyl group attached to the phenothiazine nucleus and a hydroxyethyl piperazine propyl side chain. Chemically, fluphenazine dihydrochloride is 4-{3-[2-(trifluoromethyl)-10-phenothiazinyl]-propyl}-1-piperazineethanol dihydrochloride.<sup>8</sup>

In view of the large number of so-called tranquilizing or ataractic agents available to the clinician already<sup>6</sup> and, particularly, because of the variety of phenothiazine derivatives presently known to produce desirable clinical responses in psychiatric patients,<sup>4-5,7</sup> the propriety of introducing yet another of these compounds may be questioned. However, the pharmacologic properties of fluphenazine demonstrated in extensive laboratory experiments<sup>8</sup> as well as the findings of preliminary clinical studies<sup>8-11</sup> have indicated that the drug would offer certain potential advantages in clinical use which would justify its further trial in the treatment of psychiatric patients. The basic activity of fluphenazine of interest to the psychiatrist, as is the case with other phenothiazine derivatives currently used in psychiatric practice, is its tranquilizing or ataractic effect;<sup>4,9-11</sup> indeed, fluphenazine is more potent in this action than other members of the phenothiazine series presently available.<sup>4,8,10,11</sup> Moreover, in the dosages postulated for clinical use, the drug has low toxicity<sup>4,8,10</sup> and apparently would present only minimal risk of the development of serious side effects such as blood dyscrasias and hepatic damage.<sup>4,8</sup>

In addition, fluphenazine appears to be effective in single daily doses,<sup>10</sup> an obvious advantage to the patient as well as to the professional personnel administering the drug.

The present report concerns the use of fluphenazine dihydrochloride (Prolixin) in the treatment of ambulatory psychiatric patients within an office setting. In any clinical evaluation of new drugs it has become almost traditional to employ the

double-blind and placebo technique in order to cancel out the potential influence on the observed results of environmental factors capable of producing change in the condition of the patient. The present study offers no comparison between patients treated with fluphenazine and those receiving placebo, however, because all were private patients seen in the course of a busy practice who came voluntarily for treatment and all presented evidence of the need for active therapy. Fluphenazine has already been shown to possess the type of therapeutic potential desired, both in the laboratory animal and in the human subject; therefore, its use in this study group seemed justifiable. Because of the symptoms presented by these patients, the use of inactive placebo in lieu of an active therapeutic agent did not seem justifiable. Since each patient in the series was seen on the occasion of each interview by the same examiner throughout the entire course of this investigation, all were exposed to the same environmental factors within the treatment situation. To that extent, therefore, the influence of environmental factors was obviated.

The results of this trial indicate that fluphenazine is a useful psychotherapeutic agent which will effect improvement in a significant proportion of patients and, in addition, offers definite advantages over other phenothiazines with respect both to convenience of administration and freedom from side effects. A brief account of the findings of this study is presented below.

### Method of Study

A total of 57 patients between the ages of 15 and 80 years was treated with fluphenazine. Thirty-four were female and 23 were male patients; 11 were single and the remaining 46 were either married, widowed, or divorced. All had psychiatric illnesses but all were ambulatory. All had presented themselves voluntarily for treatment, the majority upon the advice of the family physician. Except for one patient with

chronic brain syndrome with cerebral arteriosclerosis, none of the patients presented demonstrable evidence of dementia due to organic lesion of the central nervous system or showed signs of mental deterioration resulting from prolonged psychosis, severe mental defect, or cerebral dysrhythmia. Most of the patients selected for treatment displayed some insight into the psychogenic origin of their difficulties: in some patients this perception was only minimal, but in others it was well developed. Of the 57 patients chosen for study, 23 exhibited psychotic symptoms such as delusions, hallucinations, morbid depression, autistic thinking, affective incongruity, and/or bizarre behavior. The remaining 34 patients in the series presented manifestations of psycho-neurotic disorders or personality disturbances such as anxiety, depression, conversion symptoms, rumination, and/or insomnia, but showed no evidence of psychosis.

Fluphenazine was administered orally throughout the trial either as tablets containing 1 mg., 2.5 mg., or 5 mg. of the drug, or as an elixir containing 2.5 mg. per 5 cc. At the outset a loading dose was given of twice that expected to be required for maintenance, and this dose was continued for the first three days, after which the dose was reduced to the maintenance level and usually continued at that level for the rest of the treatment period. Starting doses in the individual cases ranged from 3 mg. to 6 mg. a day and maintenance doses varied from 2 mg. to 4 mg. a day. In some cases treated during the early phase of the study, fluphenazine was administered in divided doses throughout the day. It soon became apparent, however, that the peak effect of the drug might not be reached until eight hours after dosage. Patients were therefore instructed to take the medication once a day at 10 p.m. with an explanation for the change as well as the observation that the advice to take the drug just before retiring in no way implied that it would sedate them. The once-a-day schedule proved to be satisfactory and dividing the daily doses

of fluphenazine was thereafter abandoned. Treatment was continued in the individual cases for periods varying from one month to one year.

## Results

The clinical responses observed in the 57 patients under study to treatment with fluphenazine are summarized in Table I. It

relief from morbid symptoms; patients who showed a "fair response" to treatment with fluphenazine were able to perform more adequately after treatment than before the drug was administered. A review of Table I will disclose that the majority of the patients classified as "fair" responders were suffering from disorders which usually require prolonged and intensive therapy and

TABLE I—SUMMARY OF RESULTS WITH FLUPHENAZINE IN PSYCHIATRIC PATIENTS

DIAGNOSES	Number of Patients	Dosage of Fluphenazine (mg./day)	Duration of Treatment	Clinical Responses (No. of Patients)		
				Good	Fair	Poor
Schizophrenic Reaction						
Acute.....	1	2.5 to 5	5 months	1	..	..
Catatoxic Type.....	5	2 to 10	2 to 9 months	5	..	..
Hebephrenic Type.....	3	2 to 5	to 5 months	2	1	..
Schizo-Affective Type.....	2	2.5	6 weeks to 2 months	..	..	2
Paranoid Type.....	1	2.5 to 5	4 months	..	1	..
Acute Brain Syndrome (Toxemia).....	1	2.5 to 10	8 months	1	..	..
Chronic Brain Syndrome with Arteriosclerosis.....	1	5	1 year	1	..	..
Manic-Depressive Psychosis.....	1	5	1 year	1	..	..
Involutional Psychotic Reaction.....	3	2 to 3	to 6 months	1	1	1
Agitated Involutional Depression.....	3	2 to 2.5	1 to 2 months	..	1	2
Psychotic Depressive Reaction.....	1	4	.....	..	..	1
Psychophysiological Cardiovascular System Reaction	2	2 to 3	.....	1	1	..
Psychoneurotic Reaction						
Anxiety Reaction.....	13	2 to 3	to 2 months	10	2	1
Conversion Reaction.....	6	2 to 4	.....	2	3	1
Depressive Reaction.....	9	2 to 5	2 to 4.2 months	2	3	4
Sociopathic Personality Alcoholic Addiction.....	1	4	.....	..	..	1
Schizoid Personality.....	1	2.5	5 months	..	1	..
Transient Situational Personality Disturbance						
Adjustment Reaction of Late Life.....	1	2.5	Undetermined*	..	1	..
Adjustment Reaction of Adolescence.....	1	2	1 year	1	..	..
Postpartum Depression.....	1	2.5	5 months	..	..	1
Totals.....	57	.....	.....	28	15	14

\*Patient discontinued treatment without notice.

may be seen from this table that 28 of the 57 patients (49%) showed a "good response" and 15 (26%) a "fair response", but that the remaining 14 patients (25%) failed to benefit from therapy. A "good response" implied complete, or almost complete remission of symptoms; patients who exhibited a "good response" could assume their responsibilities as members of their respective communities and families, and could perform as adequately as their particular talents allowed in their individual work situations. In short, the patients who achieved a "good response" to treatment with fluphenazine obtained complete or almost complete relief from symptoms and returned to their premorbid levels of function. A "fair response" indicated significant

which, in general, offer a relatively poor prognosis for significant improvement. A "poor response" signified no relief whatsoever from the presenting symptoms.

One notable finding from the study was the prompt response observed in most patients, who usually reported improvement —when it occurred—within one week after treatment began.

Side effects were notable by their absence. Only one patient among the 57 who were treated with fluphenazine in this study developed any reaction of consequence. This patient, who had a history of allergic skin reactions to other phenothiazine compounds, also developed a severe skin reaction to fluphenazine which necessitated withdrawal of the drug. Despite her good clinical response

to each of the phenothiazines she received—chlorpromazine, prochlorperazine, trifluromazine, and fluphenazine, successively—her consistent allergic response to all of these compounds required that she be taken off this type of drug altogether. She was finally transferred to a rauwolfia derivative with good clinical results and complete relief from allergic reactions.

## Discussion

Analysis of the data recorded in the course of this study demonstrates that fluphenazine (Prolixin) possesses definite activity in relieving symptoms of the type encountered in this series of psychiatric patients. The drug appeared to be especially effective in relieving anxiety and related symptoms both in patients with and without psychosis, and it seemed to provide effective control of delusions and hallucinations in the majority of the psychotic patients treated. Moreover, the scope of action of fluphenazine appeared to range from psychic stimulation (so that withdrawn autistic patients obtained remission) to psychic tranquilization (so that hyperactive and manic patients also improved from treatment). These findings are in general conformity with those reported by others<sup>12,13</sup> in the clinical use of fluphenazine.

The effectiveness of fluphenazine in the small dosages employed also confirms the reports of others regarding the high potency of the drug.<sup>4,8,10-11</sup> Furthermore, the duration of action of fluphenazine, providing therapeutic effectiveness in a single daily dose, and the extremely small amounts of the drug required to produce clinical response are distinct advantages over other phenothiazines we have used, especially in out-patient practice.

## Summary and Conclusions

Fifty-four ambulatory patients with a variety of psychiatric illnesses, with and without psychotic manifestations, have been treated with fluphenazine (Prolixin) in

daily doses of from 2 mg. to 6 mg. for periods of from one month to one year. Of the 57 patients treated, 28 (49%) showed a "good response", 15 exhibited a "fair response" while the remaining 14 patients (25%) in the series failed to benefit from therapy. Patients with a "good response" obtained complete or almost complete remission of symptoms, returning to their respective premorbid levels of function. Patients exhibiting a "fair response" obtained significant relief from the symptoms for which they sought treatment so that they were able to perform more adequately after therapy than before they received fluphenazine.

Only one of the 57 patients developed any reaction to the administration of fluphenazine. This patient, who had developed an allergic skin reaction to other phenothiazines employed in her previous treatment, also developed a severe allergic reaction to fluphenazine which required discontinuance of the medication.

The extremely small doses of fluphenazine required to produce remission in this series of psychiatric patients, together with its effectiveness in a single daily dose, are distinct advantages, especially when the drug is to be employed in an out-patient practice.

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## Well-Adjusted Adolescents

A study of the attitudes and behavior mechanisms that enable a well-adjusted youngster to cope with problems of early adulthood is reported in the October Archives of General Psychiatry, published by the American Medical Association.

Fifteen students from the senior class of a suburban Washington, D.C., high school were selected for the study conducted by Earle Silber, M.D.; David A. Hamburg, M.D.; George V. Coelho, Ph.D.; Elizabeth B. Murphey, M.S.W.; Morris Rosenberg, Ph.D., and Leonard I. Pearlin, Ph.D., National Institute of Mental Health, Bethesda, Md.

The six boys and nine girls were chosen from volunteers on the basis of their competence in academic work, interpersonal relationships and participation in social groups. They were interviewed on a weekly basis during the latter part of their senior year.

The researchers listed three general personality attributes which helped the students cope with the transition:

—"We found the majority . . . expressed a very positive attitude toward newness. New experiences were not predominantly viewed as anxiety-laden and therefore to be avoided, but rather as desirable, exciting, and rewarding, and something to be welcomed."

—"Another impressive characteristic . . . was their tendency to be active in facing the tasks of transition. This reflected itself in the purposeful, highly autonomous way in which they assumed responsibilities for making preparations for going off to college.

—"Related to this optimistic attitude about new experiences and a hunger for them, in many cases there were indications of active enjoyment of problem-solving and pleasure derived from the process of figuring things out and in mastering them."

In addition, seven specific mechanisms were found to be used by students to adjust to the new situation:

—They often recalled relevant past experiences which had been adequately mastered.

—They viewed the transition as a gradual part of a continuous process of growing and maturation.

—They found out about the new situation in advance.

—They rehearsed the role of college students by acting the way they thought college students acted.

—They identified themselves as part of a group which shared a reputation for being adequately prepared for college.

—They lowered their expectations for achieving certain goals, primarily high grades, which provided them with "a cushion against possible future disappointment."

—They perceived college as a potentially friendly environment.

"It was not true, however, that our students approached this new experience without feelings of distress."

Anxiety was kept within manageable limits through the mechanisms employed. One of the most common means of reducing anxiety was assuming the attitude that "we're all in the same boat."

# Current Therapy of Pneumothorax

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*Spontaneous pneumothorax is usually corrected promptly by the surgical treatment in use today. The patient is returned to an active life within a few days and the prolonged period of bed rest is avoided.*

THE TREATMENT of the condition known as pneumothorax has undergone various changes in the past two decades. Although this subject has been widely and frequently discussed in the multitude of medical journals, there is still great difference of opinion regarding the best management. We will attempt to review briefly various clinical aspects of the condition and discuss the surgeon's viewpoints in treatment as are most generally agreed upon today.

The etiology of the condition in the great majority of cases is simple rupture of a subpleural bleb. However, there are many recognized causes of spontaneous pneumothorax including tuberculosis, bacterial infections, neoplasms, diseases of mediastinum and other more rare conditions. In infants and small children many cases are seen following staphylococcal pneumonia. It is generally agreed that spontaneous pneumothorax is a condition predominantly occur-

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From the Surgical Service of Stuart Circle Hospital.

ring in young adults and most authors report its occurrence in males over females in a ratio of 5:1. As reflected in our several recent cases, the condition most often appears to affect thin, asthenic individuals.

The symptoms of spontaneous pneumothorax vary from those of a sudden severe sharp stabbing pain in the chest, accompanied by marked dyspnea, to those occasional cases in which symptoms are merely malaise and easy fatigability. In general the presenting symptoms are in proportion to the degree of collapse. The sudden onset of severe chest pain in a young adult with the findings of suppressed or absent breath sounds on one side leads one to make a clinical diagnosis. When the diagnosis is not clear cut clinically, a chest x-ray will usually verify the true condition. Some patients will have relatively little pain and dyspnea but the lung will be found to be almost completely collapsed. Others may have a condition of less than 25% collapse who will have severe pain and dyspnea. The complicating factors of hemothorax and hydrothorax also vary with individual cases. They intensify the symptoms in some cases but are present in others without being suspected.

The subject of this presentation deals with current treatment of this condition. Prior to the past two decades these patients generally would have been treated with bed rest for days and perhaps weeks. It was not uncommon to have several needle aspirations, undergo much discomfort, and spend many costly days in the hospital. Most patients would have been considered tuberculous. Many of these patients developed asymmetrical chests with shift of the mediastinum, narrowing of the intercostal spaces,

elevation of the diaphragm, and even scoliosis of the thoracic spine.

A more recent practice has been to insert a soft rubber catheter painlessly into an upper anterior intercostal space and the pneumothorax allowed to exit by way of a water sealed drainage bottle. If a persistent air leak appeared to be present, this bottle could be connected to suction by way of a 3-hole bottle to control the degree of suction. Most collapsed lungs will re-expand completely and the patient can resume normal light activity within a few days. Complications such as a persistent air leak, hemothorax or hydrothorax or a plugged up catheter may delay the recovery for several days.

To quote a prominent chest physician, in answer to the question of when should the catheter be inserted in a case of spontaneous pneumothorax, the sage answer was "whenever there is room for it." The catheter suction treatment is far safer and less traumatic to the patient than repeated needle aspiration. It is much more reliable in expeditiously achieving the desired result, that of a well expanded, physiological functioning lung.

Unfortunately, spontaneous pneumothorax due to ruptured bleb cannot be treated and completely forgotten since there is a recurrence rate of about 25%. Frequently the patient with a recurrent pneumothorax will make his own diagnosis. Since subpleural blebs are usually bilateral there is always the strong possibility of collapse occurring on the opposite side. Although the occurrence of bilateral spontaneous pneumothorax is fortunately rare, it is potentially disastrous and carries with it a 50% mortality rate.

The treatment of recurrent episodes of pneumothorax necessarily becomes more complicated. There are usually pleural adhesions present and the lung may be only partially collapsed, with these adhesions holding parts of the lung against the chest wall. This demands more care in the inser-

tion of the suction catheter so that the lung itself is not entered and injured. It is also possible that a small adhesion may tear away and thus increase the amount of air leak by denudation of one or more areas of the visceral pleura. In more recent years there has been a general feeling among most surgeons that thoracotomy is indicated for recurrent episodes. In the young good risk patients there is not much argument that thoracotomy, bleb resection, and production of pleural symphysis is the treatment of choice. Most of the blebs are found over the apex of the upper lobe and these may be removed by wedge resection, unroofing, or simple puncture. Most of the air leaks are managed by simple sutures.

Production of adequate pleural symphysis is most important in achieving the desired result of preventing further episodes of spontaneous pneumothorax. The adherence of the visceral and parietal pleurae is essential in preventing further bleb development over the lung surface. Through recent years the use of a vicissitude of irritating substances such as silver nitrate solution, 50% glucose, nitrogen mustard, blood, and poudrage with various powders has almost reached an end in the evolution of treatment. The most popular method among surgeons today is parietal pleurectomy since this tends to produce a more uniform adherence of the visceral pleura to the chest wall. The other methods of producing pleural symphysis have frequently proven to be inadequate and adhesions have been piecemeal. Splotchy adhesions are potentially dangerous with complications such as pleural lacerations and hemothorax accompanying recurrent spontaneous pneumothorax.

In the present day treatment of spontaneous pneumothorax, the popular trend among most surgeons has been to treat first episode patients with the catheter and suction. Occasionally thoracotomy may be the treatment of choice when the affected lung shows incomplete re-expansion in the face

of hemothorax, hydrothorax, or persistent air leak of significant degree. The decision for thoracotomy is easier in the second episode patients since the indication is more obvious and the patient is better prepared mentally to accept it. Naturally each case has to be judged individually and only general indications may be applicable. The age and general condition of the patient would certainly outweigh any dogmatic list of indications for decisions for thoracotomy.

Figure I (W. W., 30-year-old white male)



Fig. 1. A, B, C.

- a) Complete right pneumothorax in a 30-year-old male with five day history of flu and pressure fullness in right chest.
- b) After catheter suction right lung re-expands with some fluid and atelectasis still present.
- c) With catheter removed on sixth day after air leak of four days, lung shows good re-expansion with clearing of fluid.



Fig. 2. A, B, C.

Figure II (F.C., 24-year-old white female)

- a) Complete right pneumothorax with tension in a 24-year-old white female who had sudden onset of pain and dyspnea.
- b) Re-expansion of lung after two days of catheter drainage.
- c) After discharge from hospital, lung re-expanded, some tenting of diaphragm remains.

Figure III (J.G., 31-year-old white female)

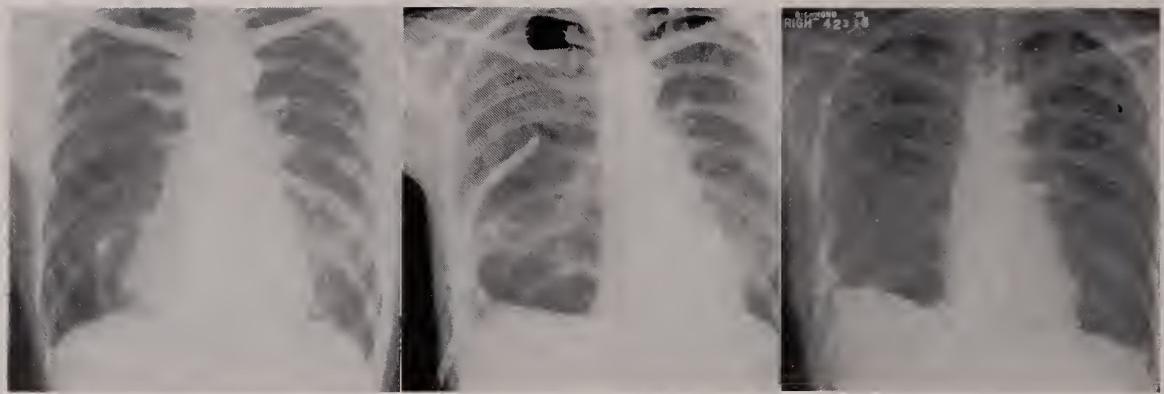


Fig. 3. A, B, C.

Figure IV (S.F., 13-year-old white male)

- Left complete tension pneumothorax noted six days after boy was kicked in left side playing football.
- Catheter suction resulted in complete re-expansion of left lung.
- Complete re-expansion of left lung, patient asymptomatic and discharged on fifth hospital day.

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Fig. 4. A, B, C.

In summary, we have reviewed the current surgical approach in treatment of pneumothorax and have included four selected cases as illustrated in Figures I-IV. These cases indicate various aspects of the current surgical management of this condition.

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# Vaginitis in Adult Women

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*The successful treatment of recurring vaginitis requires persistence, patience, and an accurate etiological diagnosis.*

A PREVIOUS STUDY of 500 cases of vaginitis<sup>1</sup> indicated that the condition was distinctly a chronic, recurrent condition in many individuals. It also revealed that, despite the original etiologic diagnosis, most cases of chronic vaginitis have common factors pertinent to their management. Experience gained since this report has confirmed these facts and the present paper is a discussion concerning some of these factors.

The four basic causes of vaginitis here considered are monilia, trichomonas, senile changes and bacterial infection. Many instances of trichomonas and monilia are single episodes that respond promptly to treatment and this is undoubtedly the reason why there are frequent reports that a single modality will cure the condition. When a woman with vaginitis is observed over a period of several years it becomes apparent that recurrence of vaginitis often reflects other illnesses and personal crises in the life of the individual. Also, some women display strong psychogenic factors underlying the condition and others develop allergic sensitization which appears to be a contributing cause. In some postmenopausal women a lack of estrogen results in atrophy of the vaginal mucosa and senile vaginitis develops. When estrogen is administered to treat senile vaginitis often a dormant monilia or trichomonas becomes active and it,

too, must be dealt with. Bacterial vaginitis represents secondary infection of vaginal ulcers. Such ulcers may result from over-treatment of trichomonas or monilia or they may be the consequence of untreated senile vaginitis. A few of the women originally reported have since developed diabetes and this possibility must always be kept in mind. A woman who has had trichomonas or monilia can invariably expect recurrence in some degree with pregnancy and the vaginitis will rarely subside with treatment until after the pregnancy is terminated. Satisfactory management of chronic vaginitis requires strict individualization of each case. Two cases are presented to illustrate the complexity of the condition. Both women have been under observation for more than ten years.

The first patient was originally seen at the age of 19, unmarried and with a case of acute trichomonas. When the vaginitis did not respond to the usual measures questioning revealed the fact that she was involved in an illicit love affair. After this was ended and her emotional stress resolved the vaginitis subsided.

Three years later she was seen again, married and four months pregnant. The trichomonas had recurred. Despite treatment it persisted throughout her pregnancy and was annoying to her until four weeks postpartum when it subsided.

Two years later she was seen in the hospital after massive antibiotic therapy for acute meningitis. Examination revealed a severe monilial vaginitis. This responded promptly to treatment as soon as the antibiotics were discontinued. A year later she became pregnant again and during this pregnancy monilia was a constant annoyance despite treatment. It too subsided after delivery.

Two years later she was seen again with a foul yellow vaginal discharge which was highly irritant. Under the stress of a long trip by car with two children she had recurrence of a vaginal irritation. She went to a physician who insufflated her vagina with a powder twice daily. At first this gave relief, then the condition became worse. Examination showed multiple infected ulcers of the vagina with an extensive bacterial vaginitis. The ulcerations presumably resulted from overtreatment with an arsenical powder. A sulfa cream provided prompt relief and the bacterial infection subsided. However, monilia subsequently appeared and required treatment and, after this was controlled, trichomonas was discovered. It was then decided to alternate days of therapy. One day the patient used a suppository for trichomonas and the next day she used one for monilia. After three months of treatment the vaginitis had subsided to the point that the patient could go for several days at a time without treatment.

It is considered noteworthy that this patient had by this time developed a pronounced allergic state with episodes of generalized skin rash, gastro-intestinal attacks and occasional seizures of asthma. She has been seen again several times with recurrence of monilia. On some of these visits she related the fact that an acute recurrence of the vaginitis coincided with the discontinuance of an antihistamine. The patient has never had glycosuria and glucose tolerance tests have thus far been reported normal.

The second patient was seen at the age of 50 with a history of no menses for four years. Approximately three months previously she had developed dyspareunia which became progressively worse to the point that she and her husband were unable to have coitus. Concurrent with the dyspareunia was an irritating yellow vaginal discharge which subsequently became a frankly bloody discharge. Examination revealed a foul bloody discharge, an ulcerated vagina and

two discrete lesions approximately two centimeters in diameter in the upper vagina which were suggestive of neoplasm. The patient was hospitalized and these two lesions were excised. The pathologic tissue report was pyogenic granuloma. This, in turn, led to the correct diagnosis of ulcerative bacterial vaginitis superimposed on an instance of progressive senile vaginitis. The use of a sulfa cream cleaned up the infection and the bleeding and the foul discharge ceased. An estrogenic cream was then used topically to overcome the atrophic changes in the vaginal mucosa. In two weeks a healthy, mature mucosa was present and sex relations were resumed without discomfort. The patient was instructed to continue to use the estrogen cream twice a week.

Two months later she returned complaining of an irritant discharge. Examination revealed trichomonas. Local treatment for this was prescribed and topical estrogen discontinued. Oral conjugated estrogen 0.3 mgm every other day was given to maintain the mature vaginal mucosa. This regimen proved satisfactory until two years later when the patient developed an acute monilia vaginitis following a course of antibiotic therapy for a respiratory infection. This subsided with treatment after the antibiotic was discontinued. Over the next several years she had had occasional recurrence of vaginal irritation. At one time it would prove to be monilial in origin, at another trichomonal. Once she went without estrogen for three months and returned because of dyspareunia from recurrent senile vaginitis.

Chronic vaginitis is a common condition and represents a complicated situation. No single modality of treatment can guarantee a cure. Many of the causative factors are unpredictable and individual tolerance to vaginal irritation varies greatly. One woman will tolerate a profuse yellow discharge loaded with trichomonas for years without complaint. Another one will be horrified because she occasionally notices a little mucus on her panty. Only one thing can

be predicted with certainty, these patients will return with further trouble. The management of chronic vaginitis is just as difficult, just as time consuming and requires as much patience and knowledge of the patient's personal life as does any other chronic, recurrent disease.

Treatment is best held to simple measures. For trichomonas Floraquin or Tricofuron suppositories, sulfa cream and douches with vinegar usually give good results. Mycostatin in the form of a suppository is almost specific for monilia. Sporostacin cream and Propion gel are also satisfactory. Painting the vagina with one percent aqueous gentian violet is helpful in severe cases and the best douche is one using baking soda. For senile vaginitis the treatment of choice is topical estrogen, usually dienestrol cream.<sup>2</sup> When

other types of vaginitis are superimposed it is usually preferable to change to oral estrogen, preferably oral conjugated estrogen 0.3 mgm administered every other day. Bacterial vaginitis usually responds promptly to a sulfa creme. In the sulfa sensitive patient some other antibacterial agent should be used. In all types a local antipruritic cream or lotion is prescribed to be applied to the vulva and vaginal introitus to relieve itching and burning.

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### Screening Prevents Mental Deficiency

A case of mental deficiency was prevented by an infant testing program in Cincinnati, it was reported in the November 25th Journal of the American Medical Association.

After testing more than 10,500 babies since 1958 for the condition known as phenylketonuria, which results in mental deficiency, a case was detected in a five-week-old baby and treatment begun at once, according to Helen K. Berry, M.A.; Betty Sutherland, M.D., and George M. Guest, M.D., University of Cincinnati College of Medicine, Cincinnati. At nine months, the child appeared to be "developing normally, both mentally and physically."

Under the Cincinnati program, hospitals distribute to new mothers kits to use in obtaining a urine specimen from the baby between four and six weeks after birth. The specimen on special filter paper is mailed

into the hospital where analysis can reveal the existence of the disorder.

Hospitals in Cincinnati with large maternity services have joined the program, and it is estimated that half the babies born in these hospitals are being tested. Recently, Kentucky and Wisconsin began infant testing programs on a statewide basis.

"As a result of these screening programs, infants with phenylketonuria have been found who would otherwise not have come to the attention of a physician until mental deficiency became apparent."

The disorder is caused by an abnormality of the metabolism of phenylalanine, an amino acid essential to normal development. Treatment with a protein, hydrolysate, can prevent this abnormality from affecting mental development but cannot reverse the mental effects once they have occurred.

# The Chordoma

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*Three cases of this unusual tumor  
are presented and the literature  
is reviewed.*

THE PURPOSE OF THIS PAPER is to present a review of the literature on the chordoma, an unusual and relatively rare tumor; and, to present a case history of each of the cranial, vertebral and sacrococcygeal types. In Case I the tumor was situated intracranially under the brain stem. In Case II the tumor involved the upper sacral and lower lumbar vertebral segments and in Case III the tumor was in the sacrococcygeal area.

## Case Reports

*Case I:* A 32 year old white female had been completely well until six weeks prior to last hospital admission on 1/23/53. She had noted a rather abrupt onset of weakness and clumsiness of the right hand and two weeks later was admitted to the hospital with symptoms of weakness, clumsiness of the right hand and headache. A brain tumor was suspected. A ventriculogram was done which revealed a slight hydrocephalus with air in the posterior fossa. It was thought advisable not to perform surgery on this patient at this time but to watch her along. She returned, approximately four weeks after discharge, on 1/23/53. She had additional complaints of increasing headaches, dizziness and dysphasia.

A suboccipital craniectomy was done. A tumor was found which was adherent to the pons. A small portion of the tumor was removed mainly for biopsy purposes since

it extended anteriorly to the pons and removal of the growth was impossible.

Microscopic diagnosis of chordoma was made.

The patient developed a temperature elevation, increasing respiratory embarrassment and died on the fourth postoperative day.

*Case II:* A 14 year old white male was admitted October 23, 1952. He complained of low back pain of one year's duration. The onset of the pain a year before admission was followed by remission two weeks later. Six months prior to admission he had a severe attack. Three months later the pain was more severe with radiation down the posterior lateral aspect of the right leg. There was some subsequent relief followed by recurrence in the left leg. The pain, especially in the left leg, was quite severe in the two months prior to admission, but the pain in the back had subsided.

The boy walked with definite weakness of both feet. There was limitation of motion of the lumbar spine in all directions. Straight leg raising was negative bilaterally. The knee jerks were active; the ankle jerks were absent. There was definite hypesthesia on the dorsal and lateral aspects of the feet bilaterally.

Roentgenograms revealed the first two sacral segments to have a peculiar mottled appearance and there was an area of bone destruction along the lower aspect of the right sacroiliac joint. Myelography revealed complete obstruction opposite the fourth lumbar vertebrae.

A lumbosacral laminectomy was done with subtotal removal of a large bone-destroying tumor of the lower lumbar and upper sacral segments. Pathological diag-

nosis was chordoma. In the eight postoperative years he had received a total of 21,800 R to the pelvic area. He has been symptom free for the past fifteen months.

*Case III:* A 72 year old white male noted onset of mild pain at the tip of the spine one year prior to this admission, 5/18/60. The discomfort has become progressively worse and several weeks prior to the present admission he noticed a small mass over the sacrococcygeal area. The area was explored by a surgeon, biopsied and the diagnosis of chordoma was made. He was referred to one of us (E.N.W.) for neurosurgical removal of the lesion.

Physical examination on admission was negative except for the operative scar at the sacrococcygeal region. X-ray studies, including laminographs, revealed decreased density of the lower sacrum and coccyx. The area of decreased density was surrounded by a zone of bone of slightly increased density. The anterior cortex of the bone appeared intact. Barium enema revealed no evidence of bowel involvement.

The old incision was opened 5/24/60. The tumor involving the sacrococcygeal area and extending around the rectum bilaterally was removed with the aid of a general surgeon (Dr. Robert Clough). Postoperative course has been uneventful and the patient was symptom free six months later.

### History

The chordoma was an unknown entity until its gross description by Luschka<sup>1</sup> in 1856. Even then, the exact nature and origin of the tumor had not been determined. Virchow<sup>2</sup> described the microscopic appearance of these tumors in 1857 and believed them to be of cartilaginous derivation. As a result he coined the name *ecchordosis physaliphora*. Again in 1857, the similarity of the tumors to the tissue of the primitive notochord was noted by Müller.<sup>3</sup> His term —chordoid tumors.

In 1895 Ribbert produced growths resembling chordomatous tumors by punctur-

ing the intervertebral discs of rabbits allowing the nucleus pulposus to herniate. The notochordal origin of chordomas was proven and thence the name *chordoma* was used. The first reported case of chordoma in this country was reported by Wood<sup>4</sup> in 1913.

### Incidence

Approximately 500 cases of chordoma have been reported in the literature. According to Littman,<sup>5</sup> 48 percent of these are sacrococcygeal, 37 percent intracranial and 15 percent are elsewhere along the vertebral column. Chordomas may become manifest at any age (our patients were 14, 32, and 72 years old respectively). The literature cites chordoma in a seven months fetus<sup>6</sup> and in an 86 year old man.<sup>7</sup> The intracranial chordomas occur in a younger age group than do the vertebral and sacrococcygeal types. In general, males are afflicted with these tumors twice as frequently as females,<sup>5</sup> but the spheno-occipital chordomas show a slight predilection for females.

### Embryology

At a very early stage in the development of all chordates there arises a rodlike back support called the notochord. This notochord provides the only axial skeleton in the amphioxus, a very primitive form of chordate.<sup>8</sup> In humans, the notochord develops through a layer of mesodermal cells which later becomes the spinal column and intervertebral discs. At about three months gestation the notochord begins to fragment and disintegrate. The intravertebral portion is normally absorbed by the fourth month of fetal life but the intervertebral portion remains as the nucleus pulposus of the intervertebral discs.<sup>9</sup>

Occasionally, ectopic rests of notochordal tissue will persist in the cranial, vertebral, or sacrococcygeal portions of the skeleton. Occurring in clusters on the surface of the involved area, these rests are usually benign in nature and are seen in 2% of all autopsies. When these rests of ectopic chordal

tissue are seen in the clivus Blumenbachii, within the vertebral bodies or internally at the sacrococcygeal junction, they are considered potentially malignant. Theoretically, there is a malignant transformation of these ectopic rests when they are liberated from their encasement by trauma. Some believe chordomas arise from projections of these ectopic masses beyond their normal boundaries; or, that they are exteriorized due to some bony defect in the involved bone. Nonetheless, the exact mechanism by which these embryonal rests develop their malignant metamorphosis has not been determined.

### Pathology

*Gross:* The gross picture presented by the chordoma is that of a gelatinous mass, apparently well encapsulated and somewhat semitranslucent in appearance. However, one not infrequently sees tumor outside of the capsule on microscopic examination. The mass may either be white, grey, or blue in color, and the hemorrhagic area within it may give rise to a currant-jelly appearance. The size is variable. There have been reports of tumors weighing 4200 grams.<sup>8</sup> Our smallest tumor weighed 33 grams.

Within the tumor itself may be seen areas of necrosis, mucoid degeneration or hemorrhage. The more solid the tumor, the more malignant it is.

Bony spicules are often seen within the tumor. These are believed to be derived either from ossification of the calcified areas or from destruction of the surrounding bone.

Metastases are rare (less than 10%).<sup>6</sup> When it occurs, the lungs, liver and regional lymph nodes are often involved. Bony metastasis does not seem to occur. Morbidity and mortality result from local extension with its sequelae.

*Microscopic:* In general, the cells are large and polyhedral. They are more closely packed towards the periphery of the tumor and are separated by fibrous tissue septae.

The cells are usually arranged in cords or sheets perpendicular to the septae. In areas, the cytoplasm becomes more vacuolated and there may be seen the typical physaliphorus cells with their high mucinous content. At the very center of the tumor intracellular and extracellular mucin are at a maximum and the cell boundaries may be less distinct or completely lost. The appearance of this case would be that of "nuclei lying in a sea of mucus".<sup>8</sup> A varying amount of this extracellular mucus has been found in all reported cases.

Mitotic figures have been described but are by no means necessary for the diagnosis. Their presence has not been shown to affect adversely the length of survival.<sup>10</sup>

Chordoma may be confused microscopically with mucinous adenocarcinoma of the rectum or sigmoid, chondroma or chondrosarcoma. The latter two offer very little problem because their cells lie in lacunae and lack intracellular vacuoles.<sup>10</sup> The former entity may be impossible to distinguish from chordoma purely by microscopic analysis.

### Diagnosis

The clinical aspects of chordoma must, of necessity, be divided according to the location of the tumor.

#### 1. Sacrococcygeal:

a) Symptoms—Low back pain, often dull in nature, and located at or near the sacrococcygeal junction is the most common original complaint. The pain may be localized or it may radiate down one or both legs. In the series of MacCarty,<sup>10</sup> et al., the pain persisted one month to eight years before the patients sought medical attention. Local or saddle anesthesia may result from involvement of the conus medullaris or the cauda equina. Bladder dysfunction, weakness, numbness and paresthesias of the lower extremities may occur. Constipation and/or rectal bleeding may be produced by the mass obstructing the gut lumen by its anterior extension.

b) Signs—A tumor mass projecting

anteriorly from the hollow of the sacrum is the most common sign. The mass can be palpated on rectal examination. It may project posteriorly giving the appearance of a knoll-like mass. This mass will be noted to increase in size over a period of time. The overlying skin is usually movable.

### 2. *Cranial:*

Signs and symptoms of increased intracranial pressure, i.e., headache, vomiting, ocular disturbances and personality change may bring these patients to their physician. Pressure on adjacent structures giving signs of pituitary insufficiency or cranial nerve involvement may be present. Intracranial chordomas must be differentiated from nasopharyngeal tumors with intracranial extension.

### 3. *Vertebral:*

These tumors are manifest chiefly by their effects on the extrvertebral structures or the spinal cord. They may present simply as a mass.

Hsieh and Hsieh<sup>11</sup> have outlined the roentgenological criteria for the diagnosis of chordoma, as follows:

- a. Expansion and hollowed-out appearance of the bone.
- b. Rarification and destruction of bone with translucency, loculation or destruction.
- c. Trabeculation of undestroyed bone.
- d. Areas of calcification in and around the tumor.

To be considered in the differential diagnosis are pelvic or rectal tumors; infectious lesions, particularly tuberculosis; neurofibroma or ganglio-neuroma, chondromas or chondrosarcoma; and, congenital anomalies such as anterior meningocele or teratoma.<sup>12</sup>

### Treatment

Most authorities feel that the best treatment of chordoma is local excision, if possible. Of course, this will have to be repeated as recurrence appears. It has been

shown that partial removal of the tumor will frequently result in shrinkage of the remaining mass.<sup>5</sup>

Complete excision of the tumor and the area it involves is frequently difficult or impossible due to its untenable location. This is especially true with the intracranial lesions. The Mayo<sup>13</sup> group in 1952 advocated the combined effort of the abdominal surgeon, neurosurgeon and orthopedist in the removal of the sacrococcygeal tumors.

In radical excision of sacrococcygeal tumors, the sacral nerves should be identified and spared, if possible, to minimize perineal anesthesia and loss of vesical and bowel control.

Response to irradiation varies from chordoma to chordoma. Rosenqvist and Saltzman<sup>14</sup> feel that preoperative irradiation to the tumor site decreases tumor size. Further, they feel that postoperative radiation must be given in dosages so large and over such an ill-defined area as to be impractical. Others,<sup>10</sup> as well as ourselves, have had encouraging results with postoperative irradiation. One of our patients is essentially symptom free eight years postoperatively—treatment in this period has been irradiation to sites of recurrence.

Treatment of the intracranial chordomas is much less gratifying. They are not removable due to their location and they seem to be much less radio-sensitive than the sacrococcygeal group.

McSweeney and Sholl<sup>15</sup> have reported a case of metastatic chordoma treated palliatively with nitrogen mustard. There was no roentgenological evidence of remission, but the patient became symptom free and was able to discontinue narcotics to which she was addicted. The efficacy of this therapy has not wholly been established.

### Prognosis

Chordomas tend to recur locally after excision or radiation. In fact, most authorities feel that recurrence is inevitable. The average life expectancy after diagnosis and

treatment is four years, but the extremes reported are from one month to twenty-three years. The recurrence is thought to be due to spillage implantation of tumor cells at the time of excision or to the presence of multiple tumor foci.<sup>6</sup>

Prolongation of life results from surgical extirpation, but actual cures have not been proven. One of our patients lived eight years postoperatively but he has had frequent recurrences treated with radiation.

Death is usually due to massive local recurrence with obstruction of the colon or ureters. Rarely it may be due to metastatic disease.<sup>9</sup>

### Conclusion

The chordoma is an invasive tumor arising from remnants of the primitive notochord and occurring in the sacrococcygeal, vertebral and intracranial area. The diagnosis is confirmed by microscopic examination. Treatment consists of radical excision, when possible, and followed, usually, by irradiation. Cures are not expected but relief from symptoms may occur for long periods of time.

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# Carcinoma of the Bladder Associated With Exstrophy

## Report of a Case and Review of the Literature.

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*The case presented is unusual in several respects: not only as to the tumor complicating her congenital anomaly but also as to the age to which she survived.*

EXSTROPHY OF THE BLADDER is said to occur in one in 30,000 births and in males seven times as frequently as in females.<sup>1</sup> Two-thirds of those with this anomaly who remain untreated die prior to twentieth year of life.<sup>2</sup> Several theories as to the etiology of this distressing condition have been put forth, adequately discussed elsewhere,<sup>3,4</sup> and will not be dealt with further here.

Whether cancer development in an exstrophic bladder be proportionately more frequent than in the normal bladder is uncertain. This complication was noted in 4% of 170 cases of exstrophy at the Mayo Clinic<sup>5</sup> and in 8% (two cases) of 25 cases at the University of Wisconsin Hospital.<sup>1</sup> This is indeed a striking incidence.

In 1955 McIntosh et al.<sup>1</sup> reviewed the reported cases of cancer in exstrophy, collecting 38 cases. These authors added two cases of their own to bring to 40 the total. Of these 25 were male, 14 female and one not stated. The literature subsequent to this has been reviewed,<sup>6-14</sup> and in addition several

cases not previously tabulated,<sup>6,7,8</sup> have been added (Table 1). These 13 plus the case reported here bring the total reported to date to 54. Of these 37 were male, 16 female and one not stated.

### Case Report

A. D. MCVH No. A-08-14-54, a 68 year old white female was admitted to the Ward Urology Service at the Medical College of Virginia Hospital on July 29, 1959, complaining of an ulcerating suprapubic mass. She was a native of England where multiple operations were performed on her in childhood for exstrophy of the bladder with resulting closure of her abdominal wall. She had remained incontinent of urine per urethram, however. Four months prior to admission she began to note lower abdominal discomfort and three months later noted urine leaked from an ulceration mass suprapublically. Subsequent occasional bleeding was noted from this area.

Except for mild orthopnea and chronic constipation she had remained in remarkably good health.

Physical examination revealed an elderly appearing, alert female in no discomfort. There was a dorsal kyphoscoliosis. She walked with the characteristic waddling gait associated with exstrophy. A reddish, fungating mass 4x4 cm. with an ulcerated center involved the lower portion of a suprapubic scar. The vulva was gray and friable, the clitoris bifid and the urethral meatus pinpoint and dribbling clear urine. No urine was expressed suprapublically with digital pressure from within the vagina;

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TABLE 1

Author	Age	Sex	Tumor Type	Treatment	Course
Lange <sup>6</sup>	53	Male	Not classified	Excision Radium implantation	Good (immediate)
Comar <sup>7</sup>	50	Male	Adenocarcinoma	Left ureterosigmoidostomy	Died postoperatively
Portillo-Sanchez <sup>8</sup>	40	Female	Not classified	Total cystectomy and ureterosigmoidostomy	Well two years
	21	Male	Adenocarcinoma	Partial cystectomy (incomplete extrophy)	"Cured"
	53	Male	Adenocarcinoma (Wade's case)	Cystectomy and Cutaneous ureterostomy	Well four years
	48	Male	Adenocarcinoma (Turner's case)	Cystectomy and Cutaneous ureterostomy	Not stated
	54	Male	Adenocarcinoma	Total cystectomy and ureterorectostomy	Well three years
Piniero <sup>9</sup>					
Staubitz et al <sup>10</sup>	66	Male	Adenocarcinoma	Prostatovesiculo-Cystectomy and Cutaneous ureterostomy	Well three years
Scott et al <sup>11</sup>	58	Male	Adenocarcinoma	Cystectomy and ureterosigmoidostomy	Good (immediate)
Wattenberg et al <sup>12</sup>	36	Male	Adenocarcinoma	Cystectomy, L. nephrectomy, R. ureterosigmoidostomy	Died with metastases
	55	Male	Adenocarcinoma	Cystectomy, ileal conduit	Died with metastases
	52	Male	Adenocarcinoma	Rt. Cutaneous ureterostomy	Died postoperatively
Simmons <sup>14</sup>	64	Male	Squamous	Cystectomy and ileal conduit	Well one year
Stuart	68	Female	Squamous	X-ray (3000r)	Died six months after treatment. No autopsy. Local disease present

vaginal and rectal examinations revealed no masses.

Laboratory studies were as follows: Hemoglobin 10.8 gms., WBC 8700, BUN 12 mg.%, urine—alkaline, 2 plus albumin, phosphate crystals and 1-3 wbc per high power field. A chest x-ray was normal, intravenous urography revealed prompt bilateral excretion with no hydronephrosis. The typical ununited pubes are shown. (Fig. 1)

Biopsy of the surface lesion revealed squamous cell epithelioma (Fig. 2), moderately well-differentiated. At cystoscopy several areas of tumor in the anterior and lateral walls were biopsied and also proved to be squamous cell carcinoma. (Fig. 3) Vulval biopsy revealed only chronic vulvitis.

X-ray therapy was advised and during the ensuing three weeks 3000r were delivered

to the tumor by a conventional 200 KV machine.



Fig. 1—5 minute intravenous urogram showing ununited pubes. Left collecting system not visible at this magnification.

She subsequently refused to return for follow-up care until February 1960 when she presented terminally ill with clinical evi-



Fig. 2—Tumor from suprapubic fistula.

dence of metastases and local residual tumor (proven at biopsy). She died forty-eight hours later. No autopsy was obtained.



Fig. 3—Tumor from bladder.

### Diagnosis

This case is the fourth reported case of squamous cell carcinoma in an exstrophic bladder. Graham<sup>15</sup> cited two cases and Simmons<sup>14</sup> the third. (Table 1) The vast ma-

jority of these tumors are adenocarcinoma in contrast to the transitional cell tumors commonly seen in previously normal bladders. Several theories have been entertained to explain the occurrence of glandular cancer in exstrophic bladders.<sup>1</sup> These are: (1) that they develop from urachal remnants, (2) that they develop from intestinal (cloacal) glands retained in the maldeveloped bladder, (3) that normally present glands "degenerate" into cancer, and (4) they result from the glandular metaplasia so commonly seen in the mucosa of ectopic bladders. The latter is currently the most popular theory.

An additional point of interest is the advanced age of this patient as few patients with exstrophy, even with partial correction of these lesions live to their late sixties.<sup>2,16</sup> In fact reported cases of exstrophy in those over sixty have been quite rare, although doubtless many unreported cases exist. Six men of ages 52-66 years are noted in Table 1.

### Summary

A case of exstrophy of the bladder complicated by squamous cell carcinoma in a 68 year old female is presented.

The literature on carcinoma in bladder exstrophy is reviewed, the total cases being fifty-four reported to date. Only four of these tumors including that in the case reported here have been squamous cell carcinoma, the majority being adenocarcinoma.

Survival to the sixth decade with exstrophy is extremely unusual.

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## Speech

There's a good chance that you haven't learned to speak.

That is, you haven't learned to speak out clearly, so that those around you can hear and understand what you say. Millions of people are more or less handicapped in their everyday affairs because of slurred speech, mumbling, swallowing word endings and other violations of vocal expressions that leave an impression of carelessness and lack of self-confidence.

Speech is our direct means of communication. Clear enunciation and a pleasant voice are among the greatest assets in modern society. This doesn't mean that everyone need be an orator, or even a public speaker. It does mean that we must make ourselves understood in our everyday dealings with the people around us.

Some people are fortunate enough to be born with voices that yield true, pure tones. From this group we obtain most of our vocal talent—singers, orators and radio and television announcers. Most of us have to be

content with everyday quality of voice, but we at least can use it to the best advantage.

Some can gain from voice lessons. Not to become a singer, but just to develop a better voice quality. Almost everyone can gain from coaching in public speaking and dramatics.

Most important of all is the effort to express ourselves as clearly and as pleasantly as possible. It doesn't require a teacher to tell us that we must speak loud enough and distinctly enough to be understood.

The American Medical Association suggests that you try a simple experiment. Ask two or three close friends or relatives—those who will give you an honest answer—whether they can understand your speech all of the time. The answers may surprise you. Or, you can ask yourself the question: How often does someone ask me to repeat a word, phrase or sentence?

A few minutes a day for a week or two of concentrating on speaking distinctly will help to develop clear speech habits that will be invaluable in human relationships.

# Paroxysmal Nocturnal Hemoglobinuria

## Report of a Case with Ulcerative Colitis and Renal Failure

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*An interesting case report including autopsy findings.*

**P**AROXYSMAL NOCTURNAL HEMOGLOBINURIA (hereafter called P.N.H.) is an uncommon chronic disease due to intravascular hemolysis of defective erythrocytes resulting in hemoglobinemia, and hemosiderinuria with intermittent hemoglobinuria. Other features of the disease include frequent and often fatal intravascular clotting and occasional leukopenia and thrombocytopenia. The pathogenesis of this disease remains obscure although hemolysis of susceptible erythrocytes due to a lowering of serum pH has long been held at least partially responsible. Recent studies<sup>1</sup> have produced controversy as to the significance of acid hemolysis. This case is presented as clinical observation of the effect of pathologically altered serum pH on the course of P.N.H.

### Case Report

A 61-year-old white housewife was admitted to the Sheltering Arms Hospital Medical Service of the Medical College of Virginia, on May 25, 1959, complaining of weakness of several weeks. Review of her past history revealed that she was first found to have ulcerative colitis in 1935. Because of increasingly severe and persistent colitis, a double-barrel ileostomy was performed in 1943. At that time she was found to have an anemia which persisted despite therapy

and cessation of gastrointestinal bleeding.

In 1955 she passed dark urine and her anemia was thought to be of an acquired hemolytic type. She was treated with steroids and blood transfusions. The possibility of paroxysmal nocturnal hemoglobinuria was entertained but numerous Ham acid hemolysin tests were negative. In 1956 her hemoglobin was 7.2 grams. She received several transfusions and for the first time experienced transfusion reactions. A specimen of blood was sent to Dr. J. Auditore at Vanderbilt University for determination of erythrocyte acetylcholinesterase activity. This was reported as being within normal limits.

Prior to the final hospitalization she began to note increasingly severe fatigue and malaise. She complained of tingling sensations in the extremities and mild symptoms of colitis. Dark urine was specifically denied.

Physical examination on admission revealed a pale, elderly, white female who appeared chronically ill. Vital signs were: blood pressure 160/60, pulse 96, temperature 98.8. Bilateral cataracts were present. A 2 cm. firm nodule was palpable in the left lobe of the thyroid. A functioning ileostomy was present in the right lower quadrant of the abdomen. The spleen was felt 3 cm. below the left costal margin. There was slight pitting edema of the lower extremities. Neurological examination was unremarkable.

Initial laboratory data showed a hemoglobin of 4.8 grams with hematocrit of 13% and blood indices of MCV-123 cubic microns; MCH - 45 micromicrograms;

MCHC- 36%. The platelet count was 290,000. Coombs' test was negative and the erythrocyte fragility was within normal limits. The reticulocyte count was 0.4%. Peripheral blood smear showed anisocytosis, poikilocytosis and hypochromasia. A Ham's serum acid hemolysin test was positive, and the urine gave a positive benzidine reaction for hemoglobin. The BUN was 12 mg./100 ml. A chest x-ray revealed moderate cardiomegaly and bilateral apical fibrocalcific scarring. Proctoscopic examination to 10 cm. revealed multiple areas of ulceration with bleeding, and biopsy material obtained at this time showed chronic proctitis. On barium enema changes of reactivated chronic ulcerative colitis were seen.

Transfusions with saline-washed packed red cells were begun and mild transfusion reactions were noted. On 6-9-59, despite multiple transfusions, her hematocrit was 20% and the hemoglobinuria persisted, being particularly evident in morning urine specimens. Anticoagulant therapy with Coumadin was initiated on 6-11-59, attempting to prevent the characteristic thrombotic phenomena. This was terminated two weeks later because of rectal bleeding. She was then placed on steroid therapy because of reactivation of her ulcerative colitis. On 7-3-59, she was noted to be lethargic and her BUN was 114 mgm%, with a creatinine of 6.3 mgm%. Acute renal failure due to transfusion reaction was considered, though a good urine flow continued. At this time the serum electrolytes were: sodium 133 mEq/L, chlorides 112 mEq/L, HCO<sub>3</sub> 7 mEq/L, and potassium 24 mEq/L. The urine pH was acid. Following readministration of intravenous 1/6 molar sodium lactate, the serum carbon dioxide combining capacity rose to near normal levels, but evidence of hemolysis persisted. On 7-6-59, tenderness and muscle spasm were noted in the left lower quadrant. The possibility of an intra-abdominal abscess was considered, but the symptoms subsided. On 7-16-59, however, she was found to have a temperature of 104° and the urine showed a 3+

albuminuria, many leukocytes, acid pH, and the culture grew *Escherichia coli* and *Aerobacter aerogenes*. Chloramphenicol and Neomycin was started. On 7-22-59, the hematocrit was 27%. The serum electrolytes were: sodium 140 mEq/L, potassium 3.2 mEq/L, chlorides 90 mEq/L, and HCO<sub>3</sub> 24 mEq/L. There was slight improvement in her condition but on 8-12-59 the temperature suddenly rose to 104° with associated confusion and hypotension. A repeat urinalysis showed many leukocytes and albuminuria. An electrocardiogram was normal. The BUN was 38 mgm% and a urine culture again grew *Escherichia coli*. Antibiotics and vasopressor therapy was instituted but she became more stuporous and expired on 8-19-59.



Fig. 1. Cross section of liver showing thrombosis within the portal vein.

*Autopsy Findings:* The body was that of a pale, chronically ill-appearing, elderly, white female. Petechial hemorrhages were scattered over the upper extremities.

The thyroid was enlarged and multinodular. The lungs were congested and there were extensive apical fibrous adhesions and scarring bilaterally. An organizing infarct was present in the right lower lobe. The liver was congested and weighed 1700 grams. Multiple thrombi of varying size were present within the intrahepatic branches of the portal vein. The gallbladder was thickened and it contained small dark irregular stones.

The spleen weighed 300 grams and was soft. The external surface was irregular due to deep scars and elevated yellow areas of softening. The cut surface revealed extensive thrombosis of the splenic vein with multiple infarcts of varying age. Surrounding the right kidney was a large perinephric abscess emanating from a ruptured carbuncle at the upper pole. The abscess extended to surround the right ureter, producing partial obstruction. Cultures grew E.coli and

showed changes of chronic ulcerative colitis. The appendix was the site of a large mucocoele, the lumen having been obliterated by scar tissue at the base. The brain was mildly edematous. Within the confluence of the meningeal sinuses a large thrombus was present which extended into its tributaries.

*Microscopic Findings:* Areas of frank infarction observed grossly were confirmed within the lungs, kidneys and spleen on microscopic examination. The lungs contained multiple intra-arterial thrombi and infarcts of varying age. The liver showed many thrombosed branches of portal vein, moderate centrolobular congestion and ischemic changes.

The Kupfer cells contained fine granules of brown pigment which stained positively from iron. Sections of the spleen revealed diffuse parenchymal fibrosis, congestion and pigment deposition. Venous and arterial thrombosis with infarcts of varying ages were also present.

Sections of the kidney revealed thrombosis of small arteries and several small areas of infarction. Acute inflammatory reaction with micro-abscesses were present. Sections from the superior pole of the right kidney revealed a large abscess with perforation of the capsule. Acute and chronic inflammatory changes were evident in the parenchyma of the left kidney. A large amount of granular brown pigment, exhibiting a positive reaction for iron, was present within the epithelium of the proximal convoluted tubules and to a lesser degree within the distal tubules.

The sections of myocardium revealed thrombosis of several small branches of the coronary arteries. Myocardial infarction was not evident.

Sections of the cerebral meninges through the venous sinuses confirmed the presence of extensive thrombosis. Small veins extending between the gyri were occluded by thrombi.

Sections of the colon revealed changes of chronic ulcerative colitis with recent acute exacerbation.

Fig. 2. Section of kidney illustrating hemosiderin within the cortical region. Stained with Prussian blue.

A.aerogenes. Otherwise, the kidneys were mildly swollen and the external surfaces were finely granular with a striking rust-brown coloration. On the cut surface this same coloration was prominent, particularly within the cortical region. Several small areas of infarction were present bilaterally. The left kidney showed areas of acute papillary necrosis. The terminal ileum was the site of a double-barrel ileostomy. The colon

## Discussion

The demise of this patient may be explained on the basis of several complicating factors, the most significant of these being an electrolyte imbalance resulting from a significant daily loss of fluids and electrolytes via the ileostomy. Renal failure due to acute pyelonephritis with necrotizing papillitis superimposed on chronic pyelonephritis seemed to have contributed to this imbalance. The development of a low serum  $\text{HCO}_3$  with a persistent acid urine pointed toward a metabolic acidosis.

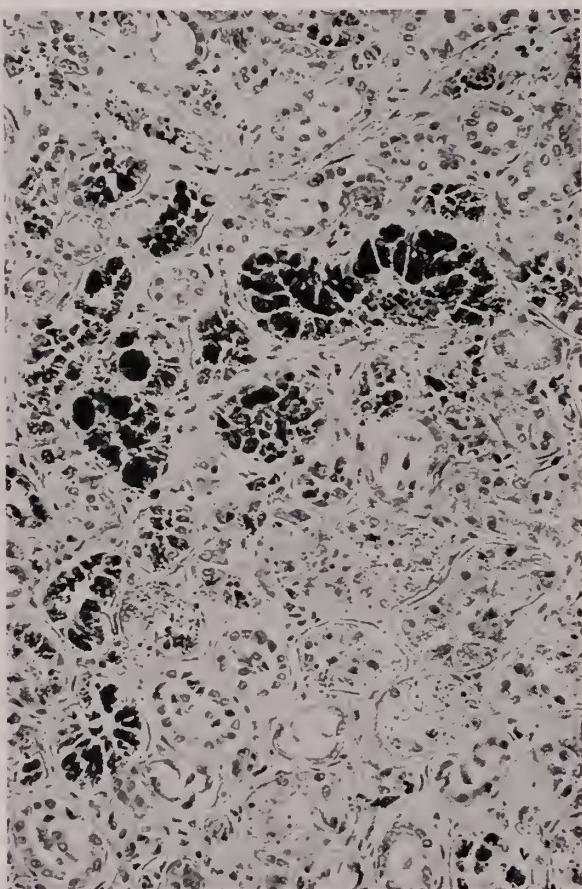


Fig. 3. Section of kidney x 160 illustrating hemosiderin within proximal convoluted tubular epithelium. Hematoxylin and eosin stain.

In this case the correction of acidosis with intravenous sodium lactate did not appreciably alter the anemia. This failure of response does not repudiate the role of acidosis in inducing hemolysis. Apparent exacerbation of hemolysis with infection and

physiological stress in general has been recognized.<sup>1</sup> In the case reported by Blaisdell, et al., the use of oral sodium bicarbonate to correct acidosis associated with uremia did not reduce hemolysis.<sup>2</sup> Ham, in an earlier study on the effects of acid-base balance in P.N.H., noted that oral administration of ammonium chloride with lowering of serum pH resulted in an initial increase in hemoglobinuria and hemoglobinemia but that this was unsustained with continued administration. Furthermore, in one patient with pyelonephritis and P.N.H. he observed that administration of ammonium chloride and ammonium mandelate did not increase hemoglobinuria. In another instance he found that orally administered sodium bicarbonate reduced hemoglobinuria and hemoglobinemia initially, but on withdrawal of alkalinizing agents there was extensive hemoglobinuria and hemoglobinemia.<sup>3</sup> In still another report the administration of acetozoleamide (Diamox) resulted in an exacerbation of hemolysis in P.N.H. presumably due to mild acidosis.<sup>4</sup> It appears from these observations that the hemolytic system is already maximally activated by some as yet unknown factors in patients with pre-existing infection and stress, such as pyelonephritis or ulcerative colitis. The ineffectiveness of the alkalinizing agents in our case might be explained on the basis that even though correction of acidosis may have been accomplished the uncontrolled infection still could have served as a stress. In the case noted, where pre-existing infection or stress presumably did not exist,<sup>3</sup> the use of alkalinizing agents did reduce hemolysis and protect susceptible erythrocytes. Withdrawal of the alkalinizing agent might have resulted in a slight fall in pH and hemolysis of the susceptible erythrocytes. The concept of susceptible erythrocytes being protected by some agent and then hemolyzed by withdrawal of the agent has been suggested elsewhere.<sup>1</sup>

Biochemical studies of the erythrocytes in cases of P.N.H. have frequently revealed marked diminution of the acetyl-cholines-

terase activity.<sup>5</sup> Auditore and Hartman have proposed that this produced increased erythrocyte permeability and therefore increased hemolysis.<sup>6</sup> There is no ready explanation as to why the erythrocyte acetylcholinesterase activity in some cases of P.N.H. is within normal range.

Renal failure associated with diffuse interstitial fibrosis of the kidney and tubular hemosiderosis as noted in our case has been reported in three other patients with P.N.H.<sup>2,7,8</sup> However, in our patient the renal dysfunction was primarily on the basis of acute and chronic pyelonephritis with papillary necrosis.

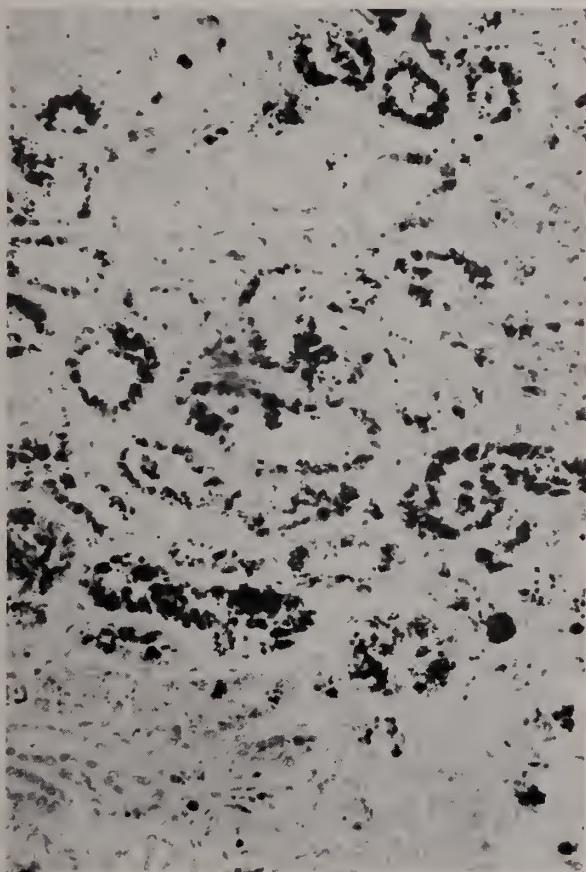


Fig. 4. Section of kidney x 160, Prussian blue stain, illustrating hemosiderin deposits within the tubular epithelium.

It seemed probable that the extensive visceral thromboses were due to the severity of the complicating factors, a prolonged agonal state and previously observed hypercoagulability in P.N.H. Thrombosis of the veins,

particularly the branches of the portal vein, has been a striking and frequent finding in the few autopsied cases.<sup>1,9</sup> Thromboses of the meningeal and cerebral vessels also have been noted,<sup>1,4,10</sup> but coronary thrombosis has been mentioned in only one instance.<sup>1</sup> Thrombotic phenomena are often responsible for death; 24 of the 51 cases reported by Crosby died of this complication.<sup>1</sup>

Hemosiderin deposition within many of the viscera is frequently severe, the kidneys, particularly the proximal convoluted tubules being the most frequent site.<sup>1,4,9,10,11</sup> This was a prominent feature in our patient.

It is generally agreed, as observed in our case, that transfusion with saline-washed red cells is the most effective therapy. The high frequency of transfusion reactions with whole blood has been explained on the presence in donor serum of a factor (s) hemolytic against the defective erythrocytes of P.N.H. (or hemolysin activating factors). The addition of the unknown factor (s) by way of whole blood transfusion might be sufficient to produce an exacerbation of hemolysis. Anticoagulation is also commonly employed in an effort to prevent thrombosis in P.N.H. The Coumadin therapy in our patient had to be discontinued because of pronounced rectal bleeding associated with ulcerative colitis. Steroid therapy in the form of Dexamethasone proved ineffective for the control of the ulcerative colitis. This regimen seemed to have little effect on the course of P.N.H., as reported by others, though some have noted benefit from therapy with ACTH.<sup>13</sup>

### Summary

A case of paroxysmal nocturnal hemoglobinuria in a 61-year-old white female with concomitant chronic ulcerative colitis and pyelonephritis is presented. The relationship of these complicating disorders to the pathological process of paroxysmal nocturnal hemoglobinuria is discussed. Autopsy findings of the characteristic visceral thromboses involving the lungs, liver, spleen,

kidneys, heart and meningeal sinuses are presented.

#### ACKNOWLEDGMENT

The authors wish to acknowledge the advice and encouragement of Drs. W. T. Thompson, Jr. and John H. Moon, of the Department of Medicine, and Dr. B. H. Hyun, of the Department of Pathology, of the Medical College of Virginia. They also wish to thank Dr. Joseph Auditore of Vanderbilt University School of Medicine for making available information regarding acetylcholinesterase activity of the patient's erythrocytes.

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#### Effective Communication

In a poll of the nation's doctors sponsored by the American Medical Association in 1958, 68 percent of the physicians interviewed stated that the detail man was their chief source of product information. Since detail men are also our most costly means of communication, we cannot rely on them entirely. Contrary to what some legislators and others would have the public believe, it

is the aim of pharmaceutical companies to spend *as little*, and not *as much*, as possible on the promotion of their products while still maintaining effective communication with the medical profession.—T. F. Davies Haines, President, Ciba Pharmaceutical Products Inc., to Association of American Medical Colleges.

# Public Health . . .

MACK I. SHANHOLTZ, M.D.  
*State Health Commissioner of Virginia*

## Diphtheria

A national program of diphtheria surveillance has been conducted at the Communicable Disease Center of the Public Health Service in Atlanta since 1955. Virginia has cooperated in this program since the beginning and, like other states, sends periodic summaries of recent diphtheria cases and notifies them if any acute outbreaks occur.

During the calendar year of 1960 information on diphtheria was submitted to CDC by 50 states and included reports on 873 clinical cases and 274 carriers by 41 states. Nine states and the District of Columbia reported no cases. Data requested on the form include location, date of onset, age, sex, race, prior diphtheria immunizations, type and toxicity of the organism isolated, clinical severity, and complications.

There has been marked decline in diphtheria cases and deaths in this country during the past 28 years. The national attack rate decreased from 40.2 per 100,000 in 1933 to 0.5 per 100,000 in 1960. There were 4,937 deaths reported in 1933 and 74 deaths were reported in 1958. During the past three years the number of reported cases and deaths have not changed appreciably.

It is important to note that the case fatality ratio during the past 28 years has ranged from six to 10 per cent. This is true despite the availability of antitoxin, antibiotics, and improved medical techniques. If diphtheria develops, you can expect a certain number of deaths.

The decrease in reported diphtheria cases and deaths has not been uniform throughout the country nor throughout the State. Diphtheria is a disease mainly of the southern states. In Virginia it has been reported chiefly from three localities.

Diphtheria remains primarily a disease of children. Seventy-eight per cent of the cases of known age in the United States were under 15 years, while 60 per cent were under 10. The greatest number of cases in the latter group were between three and six years old. It is surprising to note that 13 per cent of cases were in persons over 19 years of age.

The non-white attack rate was about six times greater than the white attack rate. In the under 10 group there was a higher proportion of non-white cases than white. There was no significant difference in case occurrence by sex.

In considering the protective effect of immunization, the criteria used by CDC during 1960 were based on the recommendations of the American Academy of Pediatrics and the American Public Health Association. They are broader than those used by CDC in 1959:

**FULLY IMMUNIZED**—Primary series completed within four years of case; or primary series completed at any time, plus a booster within four years of case onset.

**LAPSED**—primary series only, completed more than four years before case onset; or primary series at any time plus booster more than four years before case onset.

**INADEQUATE**—primary series never completed.

**NONE**—no history of immunization.

Of the 769 cases reported in the United States in 1960 in which the immunization status was recorded, 78 (10 per cent) were fully immunized and 67 (9 per cent) were lapsed. Most of the cases (72 per cent) had never been immunized. Cases of diphtheria among those who have received primary immunization are likely to be clinically mild. There is apparently a relationship be-

tween toxigenicity of the organisms isolated from cases that have a history of having had a primary series and those who have had none; there is a greater proportion of cases with nontoxigenic isolates than toxigenic isolates among those who have had the primary series.

In Virginia in 1960 there were seven cases reported from January to July and there were 32 cases reported from July to the end of December, total for the year 39. Of these cases five were white and 34 were non-white. There were only three cases that were 15 years of age or older. Fourteen had

swabs taken from the throats of all carriers.

The three areas in the State that reported the majority of the cases of diphtheria in 1960 were Nansemond County and the City of Suffolk, and the cities of Portsmouth and Richmond. The first, Nansemond-Suffolk, reported 19 cases which were divided one white and 18 colored. The City of Portsmouth reported three cases, no white and three colored, after having had no cases in 1958 and 1959, but cases each year from 1951 through 1957. The City of Richmond reported eight cases, no white and eight colored.

TABLE I  
Diphtheria in Virginia 1951-1960 by Color with Population  
and Rates for the State, Portsmouth, Richmond  
and Nansemond-Suffolk

	Cases of Diphtheria in Years										Population Rate per 100,000 based on average pop. 1951-1960
	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	
<b>VIRGINIA</b>											
White	97	77	44	19	25	20	7	10	2	5	2,861,689      10.7
Colored	97	89	53	17	20	12	15	23	11	34	781,125      47.4
Total	194	166	97	36	45	32	22	33	13	39	3,642,814      18.6
<b>PORTSMOUTH</b>											
White	3	2	7	0	4	3	1	0	0	0	62,186      32.2
Colored	12	9	2	1	11	1	5	0	0	3	35,220      124.9
Total	15	11	9	1	15	4	6	0	0	3	97,406      65.7
<b>RICHMOND</b>											
White	0	1	1	0	0	0	0	1	0	0	142,402      2.1
Colored	4	4	2	1	0	0	0	6	6	8	82,732      37.5
Total	4	5	3	1	0	0	0	7	6	8	225,134      151.1
<b>NANSEMOND-SUFFOLK</b>											
White	0	11	3	0	1	0	0	0	0	1	18,014      83.3
Colored	1	7	1	0	0	2	4	9	1	18	22,762      193.3
Total	1	18	4	0	1	2	4	9	1	19	40,776      144.7

been fully immunized; four had lapsed; two had had the first dose; twelve had had no immunization; the immunization status of seven were unknown. The severity varied from six severe cases with four deaths to 11 moderate and 21 mild cases. The severity of only one case was unknown.

During the year 1960 there were eight asymptomatic carriers reported and one carrier with a mild sore throat. Diphtheria organisms were recovered on culture of

The only effectual control of diphtheria is through active immunization on a population basis. All children should be inoculated with diphtheria toxoid. The administration of the diphtheria toxoid is frequently combined with the agents for protection against tetanus, pertussis, and polio. The following is the schedule given by the American Academy of Pediatrics and printed in Pediatrics, Vol. 26, No. 2, p. 331 (August 1960):

1½ to 2 months	D.P.T. and Poliomyelitis Vaccine
3 months	D.P.T. and Poliomyelitis Vaccine
4 months	D.P.T. and Poliomyelitis Vaccine
10-12 months	Smallpox Vaccination
12-18 months	D.P.T. and Poliomyelitis Vaccine
3-4 years	D.P.T. and Poliomyelitis Vaccine
5-6 years	Smallpox Vaccination
8 years	D.T.* and Poliomyelitis Vaccine
12 years	D.T.* and Poliomyelitis Vaccine
16 years	D.T.* and Poliomyelitis Vaccine

\*Note that the ADULT TYPE of Diphtheria Toxoid must be used.

It is emphasized that for those eight years of age and above the adult type of Diphtheria Toxoid must be used. This contains not more than 2Lf diphtheria toxoid. It is obtainable in combination with Tetanus Toxoid. If it is desired to give the Diphtheria Toxoid without the Tetanus Toxoid 0.1 ml of the pediatric strength Diphtheria Toxoid may be diluted with normal saline to make 0.5 ml, which is the usual amount given in an inoculation and in this dilution will contain 2 Lf Diphtheria Toxoid. If the pediatric strength Diphtheria Toxoid is given in full dose to those eight years and above, a reaction, which may be severe, may occur.

The *Corynebacterium diphtheriae*, or Klebs-Loeffler bacillus, is the infecting agent. Transmission is from contact with a patient or carrier or with articles soiled with discharges of such persons. The incubation period is short, usually two to five days. The period of communicability is variable, until virulent bacilli have dis-

peared from secretions and lesions—usually two weeks or less, seldom more than four weeks.

Infants born of immune mothers are relatively immune. This passive protection is usually lost before the baby reaches six months of age.

Carriers have been spoken of. There are individuals who harbor the organisms in their throats or noses but do not present symptoms of illness. The virulence of these bacteria can be tested. It sometimes happens that all efforts to rid the throat of these bacilli fail and tonsillectomy must be resorted to, to clear the throat of their presence.

*C. diphtheriae* produces a soluble toxin which affects the myocardium. Deaths from this disease are the result of this toxemia.

Treatment should be early and active with diphtheria antitoxin. Penicillin is recommended but not to the exclusion of the antitoxin, which is needed to neutralize the toxin.

All intimate contacts, especially young children, should be kept under surveillance. Adult contacts whose occupations involve handling of food or close association with children should be excluded from these occupations until it has been proved by bacteriological examination that they are not carriers.

Ref. CDC Surveillance Report—1960, No. 3, June 21, 1961

#### MONTHLY REPORT OF BUREAU OF COMMUNICABLE DISEASE CONTROL

	Jan.-		Jan.-	
	Nov.	Nov.	Nov.	Nov.
	1961	1960	1961	1960
Brucellosis -----	0	0	17	34
Diphtheria -----	0	5	12	30
Hepatitis (Infectious) -----	131	40	1416	764
Measles -----	144	205	11,800	6628
Meningococcal Infections ---	2	6	41	58
Aseptic Meningitis -----	8	1	84	42
Poliomyelitis -----	2	14	12	47
Rabies (In Animals) -----	7	12	179	203
Rocky Mt. Spotted Fever---	1	2	49	40
Streptococcal Infections ---	271	359	5605	5528
Tularemia -----	0	2	17	34
Typhoid -----	1	1	21	22

# Cancer Trends . . .

CLAUDE C. COLEMAN, JR., M.D.

## The Diagnosis of Head and Neck Cancer

Despite the accessibility of most cancers which arise in the supraclavicular structures, we constantly face the difficult problem of treating extensive neoplasms in this region. The several reasons for this discouraging fact are (1) procrastination and ignorance, (2) failure to obtain a representative biopsy of suspicious lesions in these structures, and (3) fear that treatment will result in a situation which is as debilitating as uncontrolled cancer.

Too often patients with dysphagia, trismus or other symptoms related to the head and neck are inadequately examined with tongue blade and flashlight. If such haphazard examinations are inconclusive, fre-

developed asymmetric enlargement of the cervical lymph nodes.

In order to examine adequately the head and neck, there should be a constant, fixed source of light from a headlight or mirror. The patient should be seated comfortably on a stool at the level of the examiner. The skin of the face and its appendages, and the scalp should be carefully examined for any indolent sore. Occasionally, moles which have been asymptomatic for years will itch or bleed and examination discloses ulceration or manifestations of malignant change.

The oral cavity is next inspected and any ulcers, fissure or keratoses are noted and entered on standard anatomic charts. (Fig. 1) The teeth are inspected and the gingiva

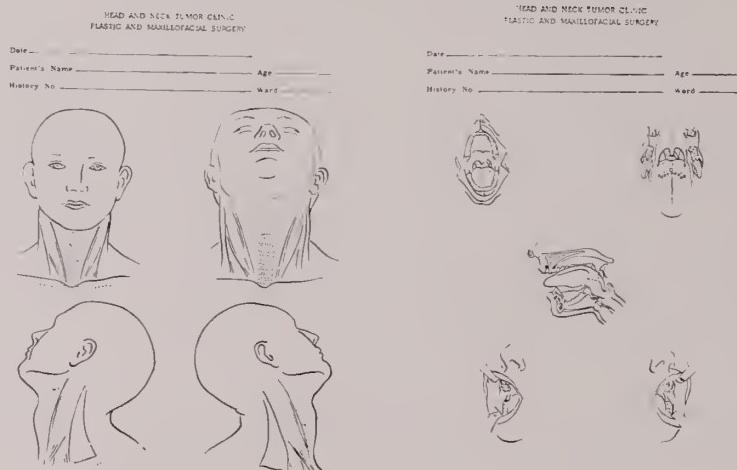


Fig. 1

quently the patient is reassured and told that there is no reason for concern. Occasionally, the symptoms continue unattended until the primary cancer grows extensively and is discernible by most any simple form of examination or until the patient has

From the Head and Neck Tumor Clinic of the Division of Plastic and Maxillofacial Surgery, University of Virginia Medical Center, Charlottesville, Virginia.

are carefully studied for mucosal changes. The buccal surfaces of the cheeks are inspected and palpated. Normally, the punctum of the parotid duct can be seen at the level of the upper second molar tooth. Careful observation will show an intermittent flow of saliva from these openings. With the tip of the tongue touching the roof of the mouth, inspection of the floor of the mouth is facilitated and discloses the open-

ing of the submaxillary and sublingual ducts on either side of the tongue frenulum. Bi-manual palpation of the cheek and floor of the mouth may disclose stones obstructing the duct systems of the major salivary glands.

The hard and soft palates are examined next, and mobility of the latter structure should be evaluated. Often lesions in the nasopharynx will displace one or both sides of this highly mobile structure. In elderly individuals, nodular growths, or exostoses, are sometimes seen in the midpoint of the hard palate and represent benign overgrowths occurring in the sagittal suture line.

The anterior two-thirds of the tongue can be inspected easily and palpated simply by grasping the tip of the tongue and gently pulling it forward. Maximal relaxation is afforded if the patient's head is tilted forward, thereby relaxing the geniohyoid and genioglossus muscles in the midplane of the floor, and the hyoglossus laterally. Such a maneuver will allow detection of most of the cancers which occur on the lateral borders of the tongue. This organ should be inspected for mucosal ulcers, atrophy of papilla and neuromuscular function.

Arching upwards from the body of the tongue are the anterior and posterior pillars of the tonsil, and these structures should be inspected before examining the rest of the tongue and supraglottic structures. The tongue is pulled forward with a gauze sponge and the hypopharynx, root of tongue and laryngopharynx are carefully inspected with a warmed laryngeal mirror. The root of the tongue is normally studded with lymphoid follicles which are not to be construed as new growths. Particular attention should be directed to the recesses on either side of the epiglottis, and the pyriform sinuses on either side of the laryngopharynx. Those structures commonly harbor occult cancer. The cartilages of the larynx are inspected at the time the vocal cords are inspected. Such examination should disclose not only new growths but any abnormality in cord position or function.

Lastly, the soft palate is gently retracted and the walls of the nasopharynx are inspected with a small laryngeal mirror. Special attention should be given to the lateral walls in the vicinity of the fossa of Rosenmuller. The eustachian tubes open into the nasopharynx at this location and cancers often arise around these openings. Occasionally, it is essential to eliminate the gag reflex with topical anesthetic spray to examine the root of the tongue and pharynx.

To examine the neck, one should stand behind the patient who is seated on a stool. We examine the parotid nodes and, with the head tilted to relax the neck muscles, the submental, submaxillary and spinal accessory chain of nodes are palpated. The group of deep jugular nodes begins high in the neck beneath the angle of the jaw. To examine these nodes accurately, the patient's head should be tilted laterally and forward to relax the sternomastoid, stylohyoid and posterior digastric muscles, all of which obscure the internal jugular vein from the examiner's fingers. These nodes, representing the most important system in the neck, are the terminal collecting stations for all cancers arising in the head and neck. This group should be palpated behind the anterior border of the sternomastoid muscles as low as the clavicles. Any asymmetric enlargement of the cervical nodes in an adult should be considered malignant until proved otherwise. Nodal enlargements are plotted on a standard anatomic sheet. (Fig. 2)

Obviously, such a thorough examination of every office patient is impractical. However, in patients whose major complaints are related to the head and neck, such an examination is imperative. If we expect to reduce the mortality of this dread disease, a diagnosis must be established before the primary cancer has become so extensive and so gross that it can be diagnosed by the patient or by a passerby on the street.

Any sore of the head or neck which persists for three weeks or longer will not respond to symptomatic therapy should be

biopsied. Any lesion may be suspected but histologic confirmation of malignancy is the only justifiable basis upon which to initiate

HEAD AND NECK TUMOR CLINIC  
PLASTIC AND MAXILLOFACIAL SURGERY

Date \_\_\_\_\_  
Patient's Name \_\_\_\_\_ Age \_\_\_\_\_  
History No \_\_\_\_\_ Ward \_\_\_\_\_

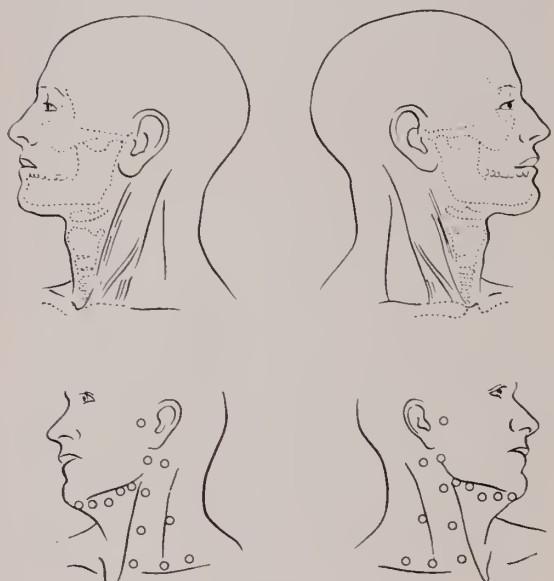


Fig. 2

appropriate therapy. The biopsy must include a segment of adjacent normal skin or mucosa for the pathologist depends largely on this zone of transition to establish a diagnosis of epidermoid and basal cell carcinomas. In this Division, almost all biopsies are performed as outpatient procedures under local anesthesia so that fixed paraffin sections can be prepared and studied before the patient is admitted to the hospital.

Occasionally, the first symptom of cancer of the head and neck is enlarged lymph nodes of the neck. Particularly is this true in occult cancers of the root of the tongue,

pharynx and nasopharynx. Such enlargements generally arise in the subdigastric group of nodes or at a lower level of the deep jugular group. The management of this problem is often tedious and difficult. We are strongly opposed to the open biopsy of every enlarged cervical node. Open biopsy is reserved as a last resort in managing these patients for the incision, if made without proper regard for subsequent neck dissection, will greatly complicate the definitive procedure since the proposed field of dissection has been violated by poorly located scars. The embolus of cancer often carries with it mouth pathogens, and, when first examined, it is not uncommon to see a red, swollen mass of nodes. To openly biopsy such a mass will often diffuse infection and cancer throughout the fascial planes of the neck.

We prefer to perform a needle biopsy using either a Martin syringe or a Silverman needle. Dissemination of tumor is less likely with such an approach and, further, there is no scar which might interfere with a formal dissection of the neck. If repeated examinations of the head and neck fail to disclose a primary cancer and if the diagnosis of the aspiration or needle biopsy is inconclusive, an open biopsy is done in the operating room. The incision for biopsy is included as part of the projected incisions utilized in flap elevation to expose the quadrilateral space intended for dissection. This biopsy is performed under local anesthesia and the specimen is sent for frozen section. If the pathologist reports the presence of a metastatic cancer, the patient is given a general endotracheal anesthetic and the indicated surgery is performed.

# *Current Currents*

## SPECIAL REPORT ON ACTIONS OF THE HOUSE OF DELEGATES OF THE AMA

The following summary covers only a few of the many important subjects dealt with by the House and is not intended as a detailed report on all actions taken.

POLITICAL ACTION: The House heartily approved the purposes and goals of the recently organized American Medical Political Action Committee and urged all physicians, their wives and interested friends to join AMPAC and other political action committees in their states and communities.

The purposes of AMPAC, which is an organization separate and distinct from the American Medical Association as required by federal law, are: 1. To promote and strive for the improvement of government by encouraging and stimulating physicians and others to take a more active and effective part in governmental affairs; 2. To encourage physicians and others to understand the nature and actions of their government as to important political issues and as to the records and positions of political parties, office holders and candidates for elective office; 3. To assist physicians and others in organizing themselves for more effective political action and for carrying out their civic responsibilities; 4. To do any and all things necessary or desirable for the attainment of the purposes stated above.

AMERICAN COLLEGE OF SURGEONS: The House agreed with the intent of five resolutions which expressed strong dissatisfaction over recent statements by a spokesman for the American College of Surgeons, and it also approved a Board of Trustees report informing the House that arrangements have been made for a January meeting with the ACS Board of Regents to discuss that organization's recent statements and policy positions. The report expressed hope that the meeting "will lead to a unification of effort in behalf of American medicine".

A reference committee report, which received House approval, said in part "Your reference committee believes the public airing of disagreements between large segments of medicine can only confuse and shake the confidence of the public in the medical profession and distort the true image of medicine which the American people should have. . . . "Your reference committee has no wish to fan the flames of controversy ignited by the statements of the American College of Surgeons. On the other hand, the committee feels the House has an obligation to its membership — which includes physicians in all types of practice — to agree with the indignation manifested by the introduction of these resolutions and in the discussions before the committee. . . ."

MEDICAL DISCIPLINE: The House received from the Council on Constitution and Bylaws a proposed amendment which would have made it possible to implement a recommendation by the Medical Disciplinary Committee that was approved by the House at the June, 1961, meeting. This recommendation was to change the bylaws so as to confer original jurisdiction on the Association to suspend and/or revoke the AMA membership of a physician found guilty of violating the Principles of Medical Ethics or the ethical policies of the Association, regardless of whether or not action has been taken against him at the local level. However, after considerable discussion on the floor of the House, the proposed amendment was referred back to the Council on Constitution and Bylaws.

In another action on medical discipline the House approved the expanded activities of the Judicial Council, which has taken over permanent responsibility in that area, and said that the Council program should benefit all physicians, the public and the profession.

POLIO VACCINE: A resolution was adopted which urged that medical societies at the local, county, district or state levels throughout the United States should encourage, stimulate and participate in surveys to determine the percentage of individuals in each community who have undergone immunizing procedures for poliomyelitis.

The resolution stated that on the basis of the results of the surveys, the local medical society should determine the type of vaccine and the most effective type of program which will be of greatest benefit to the public.

Until such time as all three types of oral vaccine are available, the resolution concluded, the Salk vaccine should be the vaccine of choice for routine poliomyelitis immunization, with the choice of program for administering the vaccine to be determined on a local basis by each county medical society.

MISCELLANEOUS: The House urged every physician in the United States to use automobile seat belts.

Approved a statement that physicians have an ethical obligation to participate in medical society activities and express their opinions fully and freely.

Reaffirmed AMA policy that it is not considered unethical for a physician to own or operate a pharmacy provided there is no exploitation of the patient.

Approved a recommendation that a special House committee be appointed to investigate all facets of the operation of the Joint Commission on Accreditation of Hospitals.

# *Mental Health . . .*

EUGENE M. CAFFEY, JR., M.D.

## **The Use of Drugs in Outpatient and Inpatient Psychiatric Practice**

Serendipity, or the knack of unexpectedly finding a good thing while looking for something else, played a part in the discovery of Thorazine at the dawn of modern age of tranquilizers, and in the more recent recognition of the value of Tofrānil in depressions. Serendipity had also played a part in my having had multiple opportunities to hear about psychotropic drugs since the early days of the VA Chemotherapy Research Program when Dr. Nagler helped us plan our first cooperative study.

In seven years since Thorazine came to the United States, the literature about tranquilizing and anti-depressant drugs, as I prefer to call them in lieu of sundry fancier names, had become enormous. Reviews, as those in *Progress in Neurology and Psychiatry* of the Medical Clinics of North America, summarizes as exemplified by the New York State list in the *American Journal of Psychiatry*, and the monthly "Compendium" of the *Journal of Neuropsychiatry*, have become prominent. The Psychopharmacology Service Center, NIMH, has published not only its Bulletin but has arranged for the appearance of *Psychopharmacology Abstracts* covering the world literature. Books of symposia have begun to be replaced by such integrated texts as those of Flach and Regan and Kalinowsky and Hoch.

The review most immediately useful to me in the preparation of these remarks,

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EUGENE M. CAFFEY, JR., M.D., *Chief of Staff, Veterans Administration Hospital, Perry Point, Maryland.*

Address made at Annual Conference, Department Mental Hygiene and Hospitals, Roanoke, Virginia, October 1961.

Approved for publication by Commissioner, Department of Mental Hygiene & Hospitals.

however, has been a Veterans Administration Medical Bulletin based on information of about June, 1960, and published early last fall. The pamphlet, incidentally, does not reflect opinion or policy of the Veterans Administration, and can be obtained from the Superintendent of Documents, U. S. Government Printing Office. As a member of a committee, I shared in the preparation of this summary; with mixed feelings I must say that our hopes that little would have to be changed immediately have been borne out. I feel that no distinctly new agent of the phenothiazine class has appeared in two years, that is, since Mellaril came on the market. Tranquilizing agents of other classes such as Taractan with its reputed anti-depressant as well as tranquilizing properties, and haloperidol, tried for its anti-psychotic effects because it produced Parkinsonism so readily, are still being investigated by our group among others. Too, an important lesser tranquilizer, Librium, and several anti-depressants, such as the nonhydrazide monoamine oxidase inhibitor, Parnate, and a Tofrānil congener, Elavil, are now available.

In this review I should like to touch on some of the highlights about these modern psychopharmacologic agents, dealing chiefly with the phenothiazine derivatives because of their great usefulness and because our cooperative studies have been largely concerned with them. The phenothiazines include about 15 important compounds. As tranquilizers they are distinguished from more conventional sedatives by the locus of their primary action in the subcortical rather than in the cortical regions, and by their failure to enforce sleep while allaying anxiety and tension. We are still speculating about the ways in which the drugs produce

their effects. Perhaps we have been looking too exclusively at the central nervous system for explanations. The very profound effects on the autonomic nervous system and upon other tissues may deserve a good deal more study. As one of my colleagues has said, "It's very impressive to see milk coming from a male breast." The recent flurry of reports about Mellaryl and sexual functioning remind us forcefully that very complex effects do occur which may account more adequately for drug effectiveness than do direct effects on the reticular activating or limbic systems.

What price does the patient pay when taking phenothiazines? The total bill is surprisingly small but may be paid in several kinds of coin. Side effects are often difficult to evaluate, because of difficulties in distinguishing them from symptoms of psychiatric illness for example, but those described may be grouped into six general classes: behavioral, central nervous system, autonomic, allergic and general, metabolic, and of course, miscellaneous. The allergic phenomena involve not only patients, but as contact dermatitis may trouble nursing personnel. A story from the early days has it that the patient was so grateful to a nurse for giving him Thorazine that he kissed her on the cheek. Next morning this "Thorazine kiss" was visible to everyone. A striking characteristic of the entire family and for that matter, of the other major tranquilizing drug, reserpine, is the appearance of a variety of extrapyramidal system disturbances. This can be not only uncomfortable but even dramatically alarming to patient and bystanders. The dystonic disturbances, especially, have occasioned great concern because they suggest diagnoses of severe central nervous system disease requiring heroic treatment. One physician narrowly escaped a tracheotomy for treatment of "tetanus" only because the peculiar pattern of his symptoms led an astute observer to inquire first about phenothiazine ingestion. The "low-dose" members of the family produce

more extrapyramidal disturbances than the "high-dose" members, while Mellaryl is less likely to produce such pictures than the others. An interesting idea recently expressed is that akathisia from low doses is related to an individual specific sensitivity to a specific molecular configuration.

The "low-dose" representatives also seem freer of autonomic disturbances, and less likely to produce intrahepatic obstructive jaundice. All of the phenothiazines are capable of inducing an increase in weight, chiefly in the first six weeks but continuing for many months at a lesser rate. The resulting "epidemic of obesity" is familiar to all, I am sure. We have no explanation for this phenomenon. If a patient adheres to a standard reduction diet, however, in my experience he can lose weight despite the drug. Any of the tranquilizers may produce delirium in high doses, or in low doses in predisposed individuals; all may induce in standard doses and in the average patient, slight decrease in mental efficiency and sluggishness of behavior or "behavioral toxicity". Side effects are most pronounced on the whole in the very old and in the very young. The nasal stuffiness frequently found with reserpine has even been described in new borns whose mothers had received the drug.

While the number of possible side effects is large, the frequency of occurrence of undesired reactions is low. Laboratory studies are not of appreciable help in their prevention nor their detection. Treatment of complications is not specific, but there are two points of interest in connection with it. Allergic disturbances, such as hepatitis and actinic dermatitis, may be caused by one member of the phenothiazine group but by none of the rest, so that following subsidence of the complication treatment may be resumed with another drug with safety. The extrapyramidal syndromes should, we feel, be treated with anti-Parkinson drugs while the phenothiazine dosage is maintained at the level required to produce maximal opportunity for improvement in psychotic

symptoms. The duration of ancillary treatment is a moot question. Some feel that in many instances the drugs may be discontinued after some weeks, while others report reappearance of symptoms when a maintenance anti-Parkinson regimen is interrupted. It is my feeling that raising the dose to the point where a Parkinsonian syndrome appears is not a desirable way of titrating the drugs in terms of effects upon behavior though it clearly is some measure of their neuroleptic activity. I know of no instances in which overdosages of phenothiazine derivatives, even 5,000 mgs. of Thorazine, or reserpine had produced death. Some fatalities have resulted from large doses of meprobamate.

The phenothiazines have been most effectively employed in the management of schizophrenic illnesses, particularly the acute undifferentiated, catatonic and paranoid subtypes. Members of the family have apparently characteristic capacity to reduce belligerence, resistiveness and thinking disturbances as measured by the rating scales in our VA cooperative studies. Some differences among drugs in terms of type or breadth of effectiveness have been suggested by our findings, but these remain hints rather than proven facts. A comparison of Thorazine, Vesprin, Mellaril, Prolixin, Taractan, and for good measure, reserpine, now being concluded hopefully will provide a better picture of the relative merits of the cream of the current agents. In general the trend is towards the use of "low-dose" drugs because of their relative freedom from undesired side effects. It was interesting to me to find, therefore, that in May of this year our hospital was using two "low-dose" (Stelazine, Trilafon) and two "high-dose" (Thorazine, Mellaril) drugs in roughly comparable quantities. Since there are many changes in drugs, of course, it is well to remember that while there are rough equivalences of dosage, that changes at fairly high doses may introduce side effects. The new drug should be started as if the patient were

receiving it for the first time, especially since there is some effect of the first drug for several days. There is little warrant for raising peak dosage above the equivalent of 1600 mg. of Thorazine a day on the basis of excretion studies.

The many problems of excretion are being widely studied. Most investigations have followed excretion in the urine, though sizable amounts are excreted by other avenues. It appears that the major portion of phenothiazine excretion is completed within two weeks, though trace excretion may continue for many weeks thereafter. Possible relationships between rapidity of excretion and rapidity of symptomatic relapse have been suggested but not substantiated. We are exploring this area as part of a study of discontinuation and reduction of dosage of Thorazine or Mellaril which is now getting started in about 20 hospitals. The study is an approach to the problem of continued treatment with the phenothiazines—a problem that has not been investigated very extensively from our survey of the literature. It appears that many schizophrenic patients require treatment for an indefinite period; some have now received Thorazine for over six years continuously. It appears, however, that many patients, especially in the more chronic groups, will maintain their improvement for months without a drug, or if reserpine replaces a phenothiazine. Even under these long-term circumstances, the rate of relapse may be influenced by the expectations of patient and treating personnel. As the foregoing suggests, our next large-scale cooperative venture is not asking which drug is better, but is this drug still really necessary?

Most therapists agree that drugs alone are not enough, in any event. Flach and Regan feel that the traditional divisions of treatment into psychological and physical is artificial, and that treatment should always be of a combined type. Kalinowsky and Hoch remind us that older somatic therapies had a respectable record of success and that

patients should not be denied consideration for them, whether or not psychopharmacologic agents are used with the electroconvulsive, insulin coma or lobotomy procedures. More generally, treating physicians want to capitalize in every way upon the frequently attained improved accessibility of the patients. As a result, every member of a mental hospital or clinic program becomes involved with patients on drugs. All the indications are that there need to be a good many more of us, and certainly we need to know a great deal more about truly supportive and constructive ways in which to be of assistance. Specifically, we should learn more about formal psychotherapy under these circumstances. Here, too, our group is planning a cooperative venture, attempting to assess the effectiveness of combined group psychotherapy and chemotherapy against each alone in hospitalized schizophrenics.

There are many other tranquilizers besides the major phenothiazine and reserpine families. The minor agents are widely used since they offer some solution to the emotional problems of living and of being ill. They are most widely used outside of hospitals, of course, which brings us to some discussion of the use of drugs in outpatient practice. It is our feeling that there are no real differences between the outpatient and inpatient in employment of the drugs. When we were preparing the Medical Bulletin last year we particularly explored this topic with the Mental Hygiene Clinic staff in our Central Office. They concurred with the conclusion that the condition of the patient and the arrangements that can be made for his general care are more determinative of the place of his treatment than is the dose level of the drug that may be employed. Elkes mentions several false assumptions at the bottom of the use of tranquilizing drugs in outpatient practice. He says:

"First is that their usefulness in the psychoses implies a role in neuroses also. This view does not

take into account the profound differences in drug reactivity between the fully established psychotic patient and the neurotic reaction type, or the normal. Dose range alone suggests these differences to be very real. Secondly, it is often thought that a chemical splitting of a disturbed pattern of adaptive behavior in which the symptoms are part of a highly reacting fluctuating process could lead to a resolution of the disorder; it does nothing of the kind, and may in fact impair the very adaptive powers upon which recovery depends. Thirdly, the illusion of a non-toxicity of this group of drugs is essentially based on the old concept of somatic side effect and somatic toxicity."

One transitional problem between the inpatient and outpatient setting, of course, is the planning for continuation of medication during the stressful initial period of return to community. A study in New York City found that 40% of patients discharged from a large state hospital to outpatient care had departed from their recommended program of medication. In a state hospital in Wisconsin, a study was made to ascertain some of the factors leading patients to make such changes. It became apparent that lack of belief on the part of the family or the family physician, side effects, apprehensions about becoming a "dope addict", and "feeling all right" played far more important roles than factors such as expense or difficulty in getting to a properly equipped drugstore. In all of these there are suggestions for us in terms of preparation of our patients, and in their management in the community.

Before leaving the tranquilizing drugs, we should note that while they have been used ubiquitously in general practice, they have some specific applications, particularly Compazine in the management of vomiting of whatever cause, reserpine preparations in the management of vascular hypertension, and several in preoperative-postoperative surgical situations.

Another group of drugs useful in psychiatric practice have been the anti-depressant agents. Results of our own cooperative

study, as well as those of other cooperative or carefully controlled single hospital studies suggest that Tofrānil is the anti-depressant of choice at this time, although the monoamine oxidase inhibitors can be helpful. The suggestion was made by a speaker at the Third World Congress of Psychiatry, Dr. Angst, that there is a hereditary determination of response to Tofrānil. He studied relatives suffering from endogenous depression, finding the same pattern of susceptibility or resistance to the drug in people related to one another. We do not feel that the amphetamines or the other stimulating agents have proven significantly advantageous in the management of depression. Side effects of Tofrānil and the MAO inhibitors have included rapid overshift into manic states, marked vascular hypotension and weight gain. Here again we have not found that laboratory studies have been helpful in detecting major difficulties, but that the best clues to them are derived from close clinical observation.

Two matters enter the use of anti-depressant drugs. The first of these is the relationship to electroconvulsive treatment. The drugs can be given safely in conjunction with it, and there are suggestions that the number of treatments required is fewer. In general, the pattern now is to try the drugs first for some 3-6 weeks before employing electroconvulsive treatment unless the degree of suicidal risk renders the latter imperative. The second is employment of psychic activators or energizers in chronic refractory schizophrenic patients. Our co-operative study of the joint administration

of Thorazine and anti-depressant drugs led us to feel that there was no advantage from the administration of the drugs that produced by Thorazine alone. We did observe a rather considerable weight gain when the agents were used together.

The anti-depressants, too, have their roles in general medical practice. They rather remarkably reduce the incidence and severity of attacks of angina pectoris in individuals with coronary artery disease, and enhance psychomotor activity in individuals with rheumatoid arthritis.

Here and there throughout my discussion I have indicated some of our VA cooperative study results and plans. We are turning from comparisons of what seem to be essentially similar drugs, although keeping an eye open for possible newer agents, and beginning to examine clues which may provide us with better ideas as to how the drugs work, and the type of patients for whom particular drugs perhaps may be useful.

Up until this time we can say that the drugs have brought about a discernible amelioration of discomfort in sizeable numbers of patients, have increased the discomfort of staffs by presenting many more occasions for discriminating planning of a therapeutic environment, and have confronted us all with opportunities for study of psychiatric illnesses as well as treatment. My conclusion is the closing sentence of Kalinowsky and Hoch's book: "At present, we can say only that we are treating empirically disorders whose etiology is unknown, with methods whose action is also shrouded in mystery."

### **Yawning Not Contagious**

Yawning is not contagious, according to Dr. Arthur Grollman, Dallas, a consultant to the Journal of the American Medical Association.

Writing in the October 28th Journal, he said: "Psychologically, yawning implies sleepiness, fatigue, or boredom. Since mem-

bers of a group are usually in a similar state of mind, it is likely that when one member of the group yawns, the others may tend to do the same. It is suggestion, rather than contagion, which makes it spread through the group."

## Miscellaneous....

### **Social Security Benefits for Disabled.**

The following statement, presented by Dr. C. S. King at a meeting of the Lynchburg Academy of Medicine on the night of October 6, 1961, was endorsed by members of the Academy:

The members of the Lynchburg Academy of Medicine wish to go on record concerning some aspects of the operation of that part of the Social Security program which involves the awarding of benefits to disabled people who are covered under the provisions of the Social Security Act. Since the enactment several years ago of the law which made it possible for people covered by Social Security to be paid Social Security benefits prior to retirement age, in the event of physical disability, the State Vocational Rehabilitation Service of the Department of Education has had the responsibility for determining the eligibility of applicants for their disability pension. In many cases in which there might be some question about the nature or extent of disability, the Vocational Rehabilitation Service has referred these people for evaluation to a specialist in the appropriate branch of medicine for an impartial evaluation and report. As the provisions of the laws governing the eligibility for disability benefits have been liberalized (from an initial requirement that the applicants had to be 50 years of age and totally and permanently disabled), the volume of applicants for benefits under this provision of Social Security has increased, with a commensurate increase in the number of these applicants who require such evaluation by physicians in the State.

It should be emphasized that this discussion does not deal with the preliminary report of an attending physician concerning the condition of his patient who has applied for Social Security disability benefits; this refers to examinations, evaluations and reports by impartial specialists who have had

no part in the care of the patient involved (in most cases), who are requested by the Disability Determinations Section of the Vocational Rehabilitation Service to evaluate these applicants and submit a detailed report of their review of the patient's medical history, appropriate physical examination, laboratory and other studies, to the Disability Determinations Section. The requests for such evaluations bear a reminder that if the applicant wishes to contest the action of the Disability Determination Section, he can appeal this action, and the physician making the evaluation is liable to be called to testify as to his findings.

These specialty evaluations, although under the administration in this State of the Vocational Rehabilitation Service, have nothing whatever to do with the primary function of this agency—that is, the rehabilitation of the physically handicapped. Compensation for these evaluations for Social Security disability benefits has been made according to the fee schedule which has been in operation for payment of medical services provided by the physicians in the State of Virginia for those people who are being given assistance by the Vocational Rehabilitation Service in an effort to accomplish rehabilitation of these people. This fee schedule is set far below fees which are customary in the State, in many cases representing 50%, or less, of normal fees for services of this sort. The physicians in the Lynchburg Academy of Medicine have gladly participated in the efforts of the Rehabilitation Service to help people with physical disability get sufficient improvement to enable them to return to productive activity, and regard participation in such a program as a part of the community service they can perform.

Concerning the application of the same fee schedule, however, to services performed in the evaluation of applicants for disability

benefits under the Social Security program, the members of the Lynchburg Academy of Medicine wish to go on record that they do not feel under any moral obligation to donate any part of their services without charge in this program, which is financed by Federal funds, and the operation of which represents an insidious entry of the government into the area of establishment of fees for medical services. It should be emphasized that the physician doing such examinations in no way contributes to the care of the patient, and that this is an impartial, objective study done solely for the benefit of the Federal government to determine eligibility for disability benefits; and as often as not, such an evaluation may result in disapproval of the application for disability benefits. We feel that the rendering of professional services in this capacity should be done on the same basis that any other business or professional group does work for the government: that is, for usual fees, as determined by the medical profession, and not by government agency.

In consideration of the above, the members of the Lynchburg Academy of Medicine:

1. Recommend to the Vocational Rehabilitation Service of the State Department of Education that a new fee schedule be adopted as soon as is practicable, to cover all services rendered in the State of Virginia in the examination of applicants for disability benefits under the provisions of the Old Age and Survivors Insurance program (Social Security). It is recommended that guidance be obtained from the Medical Advisory Board of the Vocational Rehabilitation Service, in the establishment of a fee schedule which is equitable and fair remuneration to the physicians who partic-

ipate, in terms of fee which are customary and usual throughout the State of Virginia for such services. It is further recommended that this fee schedule be separate and distinct from the fee schedule employed in compensation for professional services rendered in connection with rehabilitation of disabled people. It is also further recommended that such a revised fee schedule be reviewed each year, and additional revisions made as indicated by any changes in fees currently being charged by physicians in the state. It is suggested that the Medical Advisory Board solicit suggestions and advice about current inequities from physicians throughout the state who have been participating in evaluations for this program, for guidance in establishing an equitable schedule.

2. Emphasize that we continue to regard professional services in cooperation with the Vocational Rehabilitation Service in the effort to rehabilitate disabled people as a part of our service to the community.
3. Solicit the endorsement and support of other component societies in the State of Virginia in the position taken above.
4. Intend to re-examine the policy of the Disability Determinations Section of the Vocational Rehabilitation Service at some reasonable time in the future, and in the event that the recommendations above have not been adopted, to consider whether the members of the Lynchburg Academy of Medicine wish to continue to participate in the evaluation of disability, as outlined above.

LEWIS F. SOMERS, M.D., *President*,  
Lynchburg Academy of Medicine

# Woman's Auxiliary . . .

President	Mrs. William F. Grigg, Jr., Richmond
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Vice-Presidents	Mrs. Theodore McCord, Fairfax Mrs. Byron T. Eberly, Portsmouth
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Directors	Mrs. F. Clyde Bedsaul, Floyd Mrs. Walter A. Porter, Hillsville Mrs. Maynard R. Emlaw, Richmond

## Richmond.

Coinciding with the conventions of The Medical Society of Virginia and its auxiliary was a most enjoyable "Autumn House Tour" sponsored by the Woman's Auxiliary to the Richmond Academy of Medicine.

For many years, the Auxiliary has derived a modest bit of pleasure in being a helping hand to Sheltering Arms Hospital by its contributions of hours spent in volunteer service, drugs (garnered from physicians' offices) and financial aid. This last takes quite a bit of doing on the part of auxiliary members, but the effort is well spent if a glance at the ledger is any indication. This year's house tour grossed \$2,270. A wide variety of homes were featured ranging from the Early American period to the modern apartment. Refreshments were served at the home of Dr. and Mrs. John Edgar Stevens. Mrs. Clyde F. Bedsaul, past president of the Woman's Auxiliary to The Medical Society of Virginia and Mrs. William F. Grigg, Jr., immediate president, pouréd.

Chairmen of the tour were Mrs. Herbert W. Park and Mrs. Willard M. Fitch. They were assisted by Mesdames Harold Goodman, Robert Irby, L. Benjamin Sheppard, Maynard R. Emlaw, A. G. Velo, Melvin Yeaman, W. Henry Copley, George K. Brooks, John F. Butterworth, III and H. Chesley Decker.

NAN VELO (Mrs. A. G.)

## Arlington, Fairfax and Alexandria.

The annual tri-county (Arlington, Fairfax and Alexandria auxiliaries) luncheon, together with a fashion show by the Toni-Lee shop of Arlington, was held October 24th, at the Belle-Haven Country Club in Alexandria. Alexandria auxiliary was hostess this year. Before luncheon sherry was served by the host auxiliary. Approximately 100 members attended.

We were very honored to have as our guests, Mrs. W. F. Grigg, Jr., of Richmond, State Auxiliary president and Mrs. A. B. Gravatt, Jr., of Kilmarnock, president-elect. Mrs. James Moss, Alexandria President, introduced them.

Mrs. Grigg gave a very interesting and informative talk on what the present world situation is faced with at this crucial period, and how it affects the medical profession. Mrs. Grigg also requested that each and every member of the auxiliaries write to their Congressman and Senator vetoing the passing of the King-Anderson bill on Socialized Medicine. It is very gratifying to know that doctors' wives throughout the country are taking an active part in trying to help preserve the free choice of medical services. Mrs. Grigg also expressed her appreciation for the help given to the A.M.E.F.; student loan fund; nursing scholarships and the various other worthy organizations assisted by us.

EARLE MITCHELL  
(Mrs. Robert H. Mitchell)  
Publicity Chairman.

## Arlington.

We were very fortunate to have Mrs. Eleanor Lee Templeman as guest speaker for our November meeting. Mrs. Templeman is the author of *Arlington Heritage*. She gave a very informative talk on the research it took to be able to publish an authentic history of our northern Virginia area.

A gala dinner-dance was held November 18th at the Army-Navy Country Club by the Arlington and Alexandria Auxiliaries. A very interesting floor show was presented by the Fox Dance studio of Falls Church. We are very grateful to Mrs. Fox for showing us just what teen-agers are capable of doing. The skits were clever and well presented as were the dance numbers. Dr. & Mrs. Robert Neu's son, Bob, Jr., acted as the M.C. and conducted himself with all the self-confidence of a professional. Our sincere thanks to all of these young people for a job well done.

We have never seen the ladies look so glamorous and gay than at this affair. The food was excellent as was the music by Carmen. Everyone had a very enjoyable time dancing and renewing old acquaintances. Mrs. John E. Alexandria, Chairman for Arlington and Mrs. Wm. J. Weaver, Jr. of Alexandria, Chairman for Alexandria, together with their committees did a wonderful job in arranging this gala event, also they decorated the Club in a gay holiday motif which reminded us all that Thanksgiving is near.

We were honored to have so many guests, among them Mr. Glen Burkland, Republican Delegate from Fairfax, guest of Dr. & Mrs. Bernard Zeavin and Mr. James Thomson, Democratic Delegate from Alexandria, guest of Dr. & Mrs. James Moss.

EARLE MITCHELL  
(Mrs. Robert H. Mitchell)

### Board Meeting.

The Pre-Convention Board meeting of the Woman's Auxiliary to The Medical Society of Virginia was held in the Washington Room of the John Marshall Hotel, Richmond, October 9, 1961, at 10:00 A.M.

The meeting was called to order by the president, Mrs. F. Clyde Bedsaul, and the invocation given by the Chaplain, Mrs. Hawes Campbell.

The roll was called by the secretary, Mrs. A. B. Gravatt, Jr. Present were nineteen

officers and chairmen, eleven auxiliaries were represented, and a total of 30 members were present.

The minutes of the Mid-Winter Board meeting were read and approved.

Mrs. Walter A. Porter, Finance Chairman, read the proposed budget for 1961-62 and moved that this budget be adopted. Seconded by Mrs. Liggan. Motion passed.

Mrs. Lee S. Liggan, Chairman of Student Loan Fund, spoke on this fund and questions asked of her. Mrs. Liggan moved that we limit the loans to the normal number of years that is required for the graduation of the student. Seconded by Mrs. Soyster. Motion carried. Mrs. Liggan then moved that Virginia students, who attend any approved school of their choice, may benefit from the Student Loan Fund as long as they are sponsored by a Virginia auxiliary or an individual auxiliary member. Seconded by Mrs. Porter. Motion carried. Mrs. Liggan requested that information on the Student Loan Fund be passed on in presidential files in the county auxiliaries.

Mrs. Bedsaul appointed the following auditing committee: Mrs. Peter Soyster, Mrs. R. L. Norment, and Mrs. Robert H. Anderson.

Mrs. Bedsaul recognized Mrs. Kalford W. Howard, President of the Woman's Auxiliary to the Southern Medical Association, and three past-presidents of the Virginia Auxiliary, Mesdames Campbell, Liggan and Porter.

Mrs. William F. Grigg, President-elect, suggested that to facilitate matters in the future, a change in the by-laws should be considered whereby the new Board would not have to be approved by the new officers. Mrs. Howard spoke to this and it shall be turned over to the Revisions Chairman for consideration.

Mrs. Wyndham B. Blanton, General Chairman of the Convention, welcomed the members and made several announcements pertinent to her committee of arrangements.

Mrs. Bedsaul thanked the officers and chairman for their work and loyal support

during the year. The motion that we adjourn was carried at 11:00 A.M.

### Minutes of Annual Meeting

The Thirty-ninth Annual Meeting of the Woman's Auxiliary to The Medical Society of Virginia convened in the Roof Garden of the John Marshall Hotel, Richmond, Virginia, on October 10, 1961, with Mrs. F. Clyde Bedsaul, president, presiding.

The meeting was called to order by the president and the invocation was given by the Chaplain, Mrs. Hawes Campbell. The pledge of loyalty to the Woman's Auxiliary to the American Medical Association was repeated in unison.

The address of welcome was given by Mrs. Richard N. Baylor, president of the Woman's Auxiliary to the Richmond Academy of Medicine.

Mrs. John S. Morris, Jr., president of the Woman's Auxiliary to the Lynchburg Medical Society, responded.

Convention announcements were made by Mrs. Wyndham B. Blanton, Jr., general chairman of the convention.

The roll was called by Mrs. A. B. Gravatt, Jr., recording secretary. Eight officers, one director, and nine chairmen were present. Seventeen auxiliaries were represented and a total of sixty members were present.

Mrs. Walter A. Porter moved that we dispense with the reading of the minutes of the 38th Annual Meeting and that they be accepted as read and approved by the reading committee composed of Mrs. William F. Grigg, Jr., Mrs. Theodore McCord and Mrs. Robert Keeling. Seconded by Mrs. Maynard Emlaw and motion carried.

Mrs. Porter moved that a telegram be sent to Mrs. James M. Moss, treasurer, regretting her absence from the convention and wishing her a speedy recovery. Seconded by Mrs. Grigg and Mrs. Liggan. Motion carried and the recording secretary instructed to send the telegram.

An "In Memoriam" service was conducted by Mrs. Theodore McCord for Mrs. Charles Nelson of Richmond, Mrs. M.

Wayne Kendrick of Alexandria, and Mrs. Aubrey L. Shelton of Norfolk.

Mrs. Bedsaul presented Mrs. Harlan English of Illinois, President of the Woman's Auxiliary to the American Medical Association, and Mrs. Kalford W. Howard of Virginia, President of the Woman's Auxiliary to the Southern Medical Association.

Mrs. Bedsaul then presented the following awards:

1. For the largest increased (80%) in their contribution to AMEF—Northampton-Accomac.
2. For the largest contribution to AMEF—Newport News.
3. For the largest per capita contribution to AMEF—Alexandria.
4. For the best exhibit at the convention—Arlington.  
Honorable mention—Lynchburg.
5. For the best scrapbook—Rockingham.

The following recommendations from the Board were read by the secretary:

1. That the proposed budget for 1961-62 be accepted as read by the finance committee chairman, Mrs. Porter.
2. Regarding the Student Loan Funds:
  - a. That we limit the loans to the normal number of years that is required for the graduation of the student.
  - b. That Virginia students who attend any approved school of their choice, may benefit from the Student Loan Fund, as long as they are sponsored by a Virginia auxiliary or an individual auxiliary member.

Mrs. Porter presented the budget and moved its adoption. Seconded by Mrs. McCord. Motion carried.

Mrs. Liggan spoke on the Student Loan Fund and moved the adoption of the two motions on policy. Seconded by Mrs. Pearson and Mrs. Keeling. Both motions carried.

Mrs. Bedsaul gave her annual report to the convention and requested that the county auxiliaries communicate more frequently with the president, so that she may be informed of their activities. Mrs. Bedsaul then

introduced each officer and chairman and recognized the eight past-presidents who were present, Mesdames Campbell, Pearson, DeCormis, Hunnicutt, Emlaw, Howard, Liggan, and Porter.

Mrs. A. B. Gravatt, Jr., reported on the meeting of the Woman's Auxiliary to the American Medical Association held in New York, June 25-29, 1961.

Mrs. William F. Grigg, Jr., reported on the conference of presidents and presidents-elect held in Chicago, October 1-4, 1961.

Mrs. Carl Parker, chairman of the nominating committee gave the report of her committee as follows:

President-elect—Mrs. A. B. Gravatt, Jr.  
1st Vice president—Mrs. Theodore McCord  
2nd Vice president—Mrs. Byron T. Eberly  
3rd Vice president—Mrs. Custis Coleman  
Recording-Secretary—Mrs. Joseph T. McFadden  
Treasurer—Mrs. Walter A. Eskridge  
Directors—Mrs. F. Clyde Bedsaul  
    Mrs. Walter A. Porter  
    Mrs. Maynard Emlaw

There being no nominations from the floor, a motion was made that the nominations be closed. Motion seconded and carried. Mrs. Porter moved that the slate be elected as read by Mrs. Parker. Seconded by Mrs. Liggan. Motion carried unanimously.

Mrs. Bedsaul introduced Mrs. Harlan English who addressed the convention on the theme for the year, "Speak Your Beliefs in Deeds". Mrs. English spoke of the Packaged Programs available and the importance of informative programs at each auxiliary meeting. Auxiliary members were urged to become more than mere dues paying members of other organizations and to be able to speak up for medicine in this very critical period for medical freedom.

Mrs. Bedsaul presented Dr. Russell V. Buxton, newly elected President of The Medical Society of Virginia, who brought us greetings and words of appreciation of the work of the auxiliary.

Mrs. Bedsaul presented Mrs. Kalford W. Howard, President of the Woman's Auxiliary to the Southern Medical Association, who spoke on Southern projects and invited us to come to Dallas, Texas, November 6-9, 1961, for the Southern Convention.

Mrs. Joseph T. McFadden read the courtesy resolutions and moved their adoption. Seconded by Mrs. Porter. Motion carried.

There being no further business the meeting was adjourned to reconvene for the Inaugural luncheon.

#### *Inaugural Luncheon.*

The luncheon meeting at the Commonwealth Club was called to order at 12:30 P.M. by the president, Mrs. Clyde Bedsaul, and the invocation was given by Mrs. Hawes Campbell. Mrs. Bedsaul introduced the guests at the head table.

Mrs. Cornelius C. Lynch gave the following credentials report: delegates-74, members-83, guests-13. Total registration, 170.

During lunch the members enjoyed a fashion show, "Fashion on the Double", presented by Thalhimers. After lunch Mrs. Bedsaul thanked her officers and chairmen for their help during the past year. Special recognition was given Mrs. Blanton and Mrs. Buffey for their work in arranging for the convention.

Mrs. Harlan English installed the new officers of the auxiliary.

Mrs. Bedsaul presented the president's pin and gavel to the newly installed president, Mrs. William F. Grigg, Jr., and Mrs. Walter A. Porter presented the past-president's pin to Mrs. Bedsaul. Mrs. Grigg gave her inaugural address.

Mrs. Blanton, convention chairman, made a few announcements pertinent to her office and thanked each member of her committee for a job well done.

Mrs. Grigg declared the 39th Annual Meeting of the Woman's Auxiliary to The Medical Society of Virginia adjourned at 2:30 P.M.

RUTH L. GRAVATT  
(Mrs. A. B. Gravatt, Jr.)  
*Recording Secretary*

## Editorial....

### Castration in Cancer of the Breast

GRALAND of San Francisco states that carcinoma of the breast in the United States at the present time has an incidence rate of about 72/100,000 women, a prevalence rate of 110/100,000 and a mortality rate of 23/100,000. Despite the frequency of this condition there are greater differences of opinion as to the preferred methods of treatment than exist in many less frequently encountered tumors.

One example of this is the question as to whether, in women still menstruating, a prophylactic oophorectomy should be done at the time of definitive surgery or if this should be withheld until there is evidence of recurrence. This point has been debated for a number of years and still has not been resolved.

Many surgeons advocate carrying out the radical mastectomy and oophorectomy during the course of the same operation. Others perform the oophorectomy a few days following the mastectomy but during the same hospital stay. A second and possibly smaller group prefers to wait until there is a demonstrable need for this accessory operation. The writer belongs to the latter category for the following considerations.

In the light of our present knowledge a radical mastectomy, possibly followed by radiotherapy, is the only treatment that holds forth hope of complete and permanent eradication of carcinoma of the breast. This sets radical surgery apart from all other modalities, for while the latter may delay the progress of the growth, or bring about a remission, they ultimately fail to prevent a recurrence of the tumor. In other words, if a radical mastectomy is performed, all of the additional therapeutic aids may also be utilized, but if the initial surgery was not curative, the condition will eventually return.

It is general knowledge that the benefit derived from simultaneous use of therapeutic measures which arrest, but do not cure, is of shorter duration than the benefit that results when the same treatments are spread over a period of time and the second agent is not used until the effect of the first has begun to wane. Staging of the agents therefore appears to prolong the sum total of the beneficial effects.

A second advantage that is derived from delaying oophorectomy until a recurrence is discovered is the knowledge derived from the response of the tumor to castration when this measure is unassociated with any other

therapeutic aid. If the radical mastectomy and oophorectomy are carried out simultaneously it may not be possible to determine the value of the oophorectomy. It is true that a rapid recurrence would suggest that neither measure was of material aid but a longer latent period would leave one in doubt as to whether the surgery or the diminished estrogen secondary to the oophorectomy had played the major role in the respite from the tumor.

If, on the other hand, there is definite regression of the recurrence following an oophorectomy carried out as a separate procedure, there is every reason to believe that the tumor is sensitive to reduction in estrogen. This would suggest that a bilateral adrenalectomy or hypophysectomy should be of further aid. Conversely, if no benefit follows oophorectomy, the likelihood of these more radical procedures proving helpful is correspondingly diminished.

A third consideration is the psychological effect upon the patient who has a radical mastectomy and oophorectomy during the same hospitalization. The knowledge that a cancer was discovered is often overshadowed in the mind of the patient by the mutilating operation that was necessary to eradicate the disease. As one patient expressed it, the "humiliation" caused by the operation was the worst thing about it. When an oophorectomy with an immediate artificial menopause is added to what has already become a nightmarish experience, it is remarkable that more of these patients do not have major emotional upsets. It is far better if the patient requiring a radical mastectomy is permitted to adjust to her postoperative status, before a second procedure, which she may consider completely defeminizing, is carried out. Especially true is this when the need for this secondary operation may never arise.

HARRY J. WARTHEN, M.D.

# *Society Activities . . .*

## **Virginia Pediatric Society.**

The meeting of this Society will be held February 23-25 at the Williamsburg Inn. Guest speakers include Dr. Charles A. Jane-way, Boston; Dr. Eric Denhoff, Providence, and Dr. John H. Githins, Lexington.

Further information may be obtained from Dr. Charles C. Powel, Secretary, 201 Professional Building, Harrisonburg.

## **American College of Chest Physicians.**

The Virginia Chapter of the College held its annual meeting in Richmond on October 9th. The following officers were elected: president, Dr. George E. Ewart, Richmond; vice-president, Dr. Cecil C. Smith, Catawba; and secretary-treasurer, Dr. C. Graham H. Bourhill, Richmond.

## **Southern Medical Association.**

At the meeting of this Association, held in Dallas November 6-9, Dr. A. Clayton McCarty, Louisville, succeeded Dr. Lee F. Turlington, Birmingham, to the presidency. Dr. Fount Richardson\*, Fayetteville, Arkansas, was named president-elect; and Drs. Robert D. Moreton, Fort Worth, and Charles Max Cole, Dallas, vice presidents. Dr. Charles M. Caravati, Richmond, continues as a member of the Council.

## **The American College of Surgeons**

Will hold its final 1962 sectional meeting in Washington, D. C., April 16-18. This meeting is open to all members of the med-

\*Since this meeting, report has been received of the death of Dr. Richardson on November 23rd.

ical profession and headquarters will be the Sheraton-Park Hotel.

## **Virginia Association of Medical Assistants.**

The Sixth Annual Meeting of the Virginia Association of Medical Assistants held at the Hotel Jefferson, Richmond, November 10-12, was the most successful in its history—based upon the attendance and the enthusiasm shown by the registrants, especially those of the newest chapters, Danville and Norfolk.

Mrs. Mary Harris was installed as president and Miss Nida Wickline was elected President Elect. The 1962 meeting will be held in Front Royal and the 1963 meeting will be at the Monticello Hotel, Norfolk.

As retiring Medical Advisor, after having the privilege of working with these ladies for three years, I speak from experience when I say that they are truly the physician's "Girl Friday" in their battle to improve the IMAGE of the doctor in the eyes of the Public.

The membership of this organization is small, compared to the potential, although it is growing steadily. More interest on the part of us physicians in urging our girls who are not members to join and insisting that those in our offices who are members, retain their membership and increase their active support of this organization, will pay big dividends in improved better Public Relations.

JOHN WYATT DAVIS, JR., M.D.

# News . . .

## New Members.

Since the list published in the December issue, the following members have been admitted into The Medical Society of Virginia:

Ralph Townsend Artman, M.D., Suffolk  
John Charles Bucur, M.D., Falls Church  
William Carl Kappes, Jr., M.D.,  
Waynesboro  
Cyrus Patrick Lewis, M.D.,  
Colonial Heights  
William Markley McKinney, M.D.,  
Charlottesville  
M. Susan J. Mellette, M.D., Richmond  
Benjamin Rivers Ogburn, M.D.,  
Lawrenceville  
Earl Forrest Rose, M.D., Norfolk  
Jai Y. Ryu, M.D., Alexandria  
White McKenzie Wallenborn, M.D.,  
Charlottesville  
David Collin Williams, M.D., Capron

## Dr. Paul Hogg,

Newport News, has been elected president of the Virginia Society for Crippled Children and Adults. Dr. Andrew F. Giesen, Radford, was named vice-president.

## Dr. A. Erskine Sproul

Has been appointed to the Staunton School Board by the City Council.

## Heart Symposium.

The third annual Heart Symposium of the Tidewater Heart Association will be held on March 14th at the Golden Triangle Motor Hotel, Norfolk. For further information, contact the executive director, Mrs. Beatrice S. McKay, 702 Duke Street, Norfolk.

## Memorial to Dr. Southall.

An annual athletic award in memory of the late Dr. A. R. Southall, Jr., is being established by three Louisa organizations. A

trophy will be given an outstanding senior athlete from the Louisa High School each year and a commemorative plaque will be placed in the high school. The Boosters Club, the Louisa County Lions Club and the high school's Monogram Club are the sponsoring organizations.

## Dr. Nelson Mercer,

Medical College of Virginia class of 1914, retired in November after many years of Federal service in the Army and as a Medical Officer in the U. S. Civil Service Commission in Washington, D. C. He will continue on active duty in the same position in the Medical Division of the Central Office of the Commission. Dr. Mercer served in the National Guard of Virginia from 1913 to 1937 when he resigned as State Surgeon on the State Staff.

Dr. Mercer, his wife and daughter, will continue to live in Washington.

## The Gill Memorial Eye, Ear and Throat Hospital,

Roanoke, announces the following guest speakers for its Thirty-Fifth Annual Spring Congress to be held April 2-6, 1962: J. Gordon Cole, M.D., New York; Leroy Crandell, M.D., Winston-Salem; David D. Donaldson, M.D., Boston; Richard T. Farrior, M.D., Tampa; Miles A. Galin, M.D., New York; W. Horsley Gantt, M.D., Baltimore; Irvin Hantman, M.D., Washington; Fred Harbert, M.D., Philadelphia; R. D. Harley, M.D., Atlantic City; R. L. Hilsinger, M.D., Cincinnati; Blaine S. Nashold, M.D., Durham; George T. Pack, M.D., New York; Marshall M. Parks, M.D., Washington; Peter Pastore, M.D., Richmond; A. Benedict Rizzuti, M.D., Brooklyn; A. D. Rueemann, Detroit; Herbert O. Sieker, M.D., Durham; Byron Smith, M.D., New York; James Snead, M.D., Roanoke; P. D. Trevor-Roper, M.D., London, England; Richard

Troutman, M.D., Brooklyn; and Harry J. Warthen, M.D., Richmond.

For further information, write Superintendent, P. O. Box 1789, Roanoke.

#### Wanted.

Obstetrician-gynecologist needed for group practice. Board eligible or certified. To head department. Location in Southwestern Virginia. Write #20, care Virginia Medical Monthly, 4205 Dover Road, Richmond 21, Virginia. (Adv.)

#### Wanted.

Roentgenologist needed for group practice in Southwestern Virginia. Write #25, care Virginia Medical Monthly, 4205 Dover Road, Richmond 21, Virginia. (Adv.)

#### Wanted.

A young or middle-aged physician in Moundsville, West Virginia. This is a growing community with coal, oil, gas and timber. We have a great chemical center south of us. We have the B. & O. Railroad east and west and the B. & O. and Pennsylvania

Railroads, north and south. We are starting to build a \$3,500,000 hospital. This would be a good location for a surgeon. I am 81 years of age and need someone in my large spacious office. Write or phone Robert A. Ashworth, M.D., 906 Third Street, Moundsville, West Virginia. Phone Tilden 5-3024. (Adv.)

#### Wanted.

Obstetrical-gynecological associate, group practice. Two man service. Southwest Virginia. Very progressive financial scale. Boards not required. Write #10, care Virginia Medical Monthly, 4205 Dover Road, Richmond 21, Virginia. (Adv.)

#### For Sale.

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## Obituaries . . .

### Dr. Henry Adolphus Wiseman, Jr.,

Dean of Danville physicians, died November 11th, at the age of eighty-four. Although he had not been well, he maintained his practice in a limited way. Dr. Wiseman received his medical degree from the University of Virginia in 1901. He had practiced in Danville since his graduation, except for service in the Army during World War I. Following his return to practice he kept alive his war associations to marked degree and was one of the organizers and the first commanding officer of Virginia Hospital Company No. 110 Virginia Na-

tional Guard. Dr. Wiseman's death came only hours before the annual reunion of his old artillery company—an event he looked forward to and rarely missed. He was a member of Roman Eagle Lodge of Masons and Dove Commandery of Knights Templar.

Dr. Wiseman had served as president of the Danville-Pittsylvania Academy of Medicine. He had been a member of The Medical Society of Virginia for sixty years.

His wife and three children survive him. A son is Dr. Wiseman, III, also practicing in Danville.

## **Dr. Henry Cannon Spalding,**

Associate professor of obstetrics and gynecology at the Medical College of Virginia, died November 16th after a long illness. He was fifty-eight years of age and a graduate of the College in 1931. Dr. Spalding had been a professor at the College since 1934. He had been a member of The Medical Society of Virginia for twenty-seven years.

A son and a daughter survive him.

## **Dr. Hodges.**

Dr. Fred M. Hodges was born October 31, 1887, in Linden, North Carolina. Following his primary training in the local schools, he attended the University of Georgia, the Medical College of Virginia, and the University of Pennsylvania School of Medicine. Upon graduation in 1910, Dr. Hodges returned to Richmond and for two years engaged in the practice of general medicine. Being interested in newer things, the then new specialty of x-ray attracted his attention, so he closed his office to take special training in Vienna. Once again home, he practiced radiology until World War I, when he joined the U. S. Army Base Hospital 45, known here as the McGuire Unit. While in France he was appointed chief radiologist to the Justice Group of hospitals in the Toul area. After the war, Major Hodges came back to practice, teach and become a leader in civic as well as medical affairs.

Dr. Hodges taught at the Medical College of Virginia, and although busy in the private practice of radiology, he found time to become president of the Richmond Academy of Medicine, the Southern Medical Association, the American College of Radiology and the American Roentgen Ray Society. He was chief radiologist at Retreat for the Sick, Stuart Circle, St. Elizabeth and Grace Hospitals.

Dr. Hodges was an active writer and his published papers attest to some of his special interests. He received recognition for his contributions which have resulted in improvement in the treatment of certain benign and malignant tumors and inflammatory conditions.

Dr. Hodges' other interests included sports, gardening and people. Recognizing the need of certain underprivileged children in Richmond, he and his friend, the late Dr. W. T. Graham, started and counseled the Gambles Hill Community Center in its useful work. His life was a model of a balance of humility, modesty, wisdom and courage.

Dr. Hodges died at his home October 24, 1961.

He is survived by his wife and their two children.

THEREFORE BE IT RESOLVED that the profession has lost an esteemed physician and the community a valued citizen.

BE IT FURTHER RESOLVED that a copy of these resolutions be sent to Dr. Hodges' family and to The Medical Society of Virginia.

HUNTER B. FRISCHKORN, JR., M.D., *Chairman*  
CARRINGTON WILLIAMS, SR., M.D.

JOHN BELL WILLIAMS, M.D.

## **Dr. Apperly.**

Dr. Frank Longstaff Apperly was born July 26, 1888, in Shepperton, Victoria, Australia. From 1903 to 1906 he attended Wesley College, Melbourne and Queen's College of the University of Melbourne, on academic scholarships. From 1907 to 1910 he studied medicine at the University of Melbourne on a scholarship, which he received for winning first place in a scholastic college competition. In addition to his academic achievements, he found time to win his colors in rowing and was secretary to the Boat Club. In 1910 he was elected a Rhodes Scholars and attend Oxford until 1913 obtaining his B.A. in medicine in 1912.

He was called into the service in 1915, and served with the British Army as a medical officer from 1915 to 1918, obtaining his M.A., M.B. and B.Ch. by taking his examinations while on a short leave from service.

He obtained advanced M.D. degrees from Oxford in 1920, from Melbourne in 1923, and a D.Sc. from Melbourne in 1924. From 1920 to 1932 he served in the Department of Pathology at Melbourne University in various positions, including that of acting chairman for two years. He was invited to become Professor of Pathology at the Medical College of Virginia, where he served until 1958 at which time he became Emeritus Professor of Pathology.

His honors and achievements were many. He published over seventy papers in the field of pathology and physiology. A recent valuable addition to medical literature was his textbook, "Patterns of Diseases". These contributed greatly to our understanding of the patho-physiology and gastro-intestinal disturbances. His greatest achievement, though an unwritten one, and one for which he will be remembered longest, was his ability to correlate physiology and pathology, which he instilled in his students by his great love and faculty for teaching. The clarity of his lectures was appreciated by all his students at the Medical College of Virginia for over a quarter of a century.

THEREFORE, BE IT RESOLVED that his passing at the end of a long and scholarly life be honored by

the members of this society, this tribute be placed in the permanent records of our society, and a copy of this memorial be given to his devoted wife.

HENRY KUPFER, M.D.  
LESTER BELTER, M.D.  
SAUL KAY, M.D.

### Dr. Freed.

WHEREAS, Dr. Charles Conrad Freed, a beloved member of the Medical Staff of the Waynesboro Community Hospital, surrendered this mortal life to reap his reward on September 16, 1961, and

WHEREAS, we his colleagues of long standing, who recognize in his passing a great loss to the profession and to the community wish to pay tribute to his memory by the unanimous adoption of this resolution:

Dr. Freed was born in Middlebrook, Virginia, on January 9, 1900. He was the son of a Lutheran minister and at an early age the family moved to Columbia, South Carolina, when his father became President of the Southern Seminary in that city. Later he attended Newberry College and also the University of South Carolina for his premedical education and was graduated with the degree of Doctor of Medicine from the Medical College of South Carolina. After an internship at McCloud Infirmary in Florence, South Carolina, he served for awhile with the South Carolina Public Health Service. This was followed by a short period in general practice at Gaffney and Dillon, South Carolina. It was during this time that he met and later married Elizabeth Stackhouse, who was then a resident of Dillon, South Carolina.

Having decided to abandon general practice in favor of specialization, he went to the New York Eye and Ear Infirmary in 1927 where he received his postgraduate training in Ophthalmology and Otolaryngology. He also received some additional training at Gill Memorial Hospital in Roanoke,

Dr. and Mrs. Freed then settled in Waynesboro, where he practiced his specialty until failing health forced his retirement about two years ago. Dr. Freed was instrumental in the founding of the original Waynesboro General Hospital, which was later renamed the Waynesboro Community Hospital. At one time, he was President of the Medical Staff of the Hospital, and had also been a President of the Augusta County Medical Association. He was, for many years, an active Rotarian and in 1935-36 served as its President. He was a devoted and influential member of the Grace Lutheran Church and a member of the Masonic order. His interest in the

community in which he lived was exhibited by his service as a member of the Public School Board and his active participation in the Fishburne-Hudgins Education Foundation which came to the rescue of Fishburne Military School in its time of adversity, and helped it to achieve the success which it now enjoys. He also established an annual award, which bears his name, to be awarded to some student at Fishburne Military School each year for outstanding achievement. These are just a few of the many ways in which he endeared himself to the community.

WHEREAS, we, his fellow members of the Medical Staff of the Waynesboro Community Hospital, unite with his many grateful patients and friends to share with his family in their bereavement. His friendly demeanor, his keen sense of humor, and his deep interest in community affairs will be missed by all who were privileged to know him.

NOW, THEREFORE, BE IT RESOLVED by the Medical Staff of the Waynesboro Community Hospital, on this the 16th day of October, 1961, that we convey to his family our sincere sympathy and deep respect for his memory. This evidence of our high regard and love for him will be recorded as a Memorial to him for all posterity to see.

BE IT FURTHER RESOLVED, that a copy of this Resolution be sent to his family, a copy to the Virginia Medical Monthly, and a copy to be preserved as a part of the permanent records of this Hospital.

Resolutions Committee  
Medical Staff  
Waynesboro Community Hospital

### Dr. Glynn.

WHEREAS, Almighty God, in His Infinite Wisdom, has called to Him Matthew C. Glynn, Jr., M.D., who has been a member of the Portsmouth Academy of Medicine, and who has ably served his community in the practice of medicine, with devotion and sincere interest; and

WHEREAS, his passing is a tremendous loss to the Academy and the community, because of the love and esteem in which he was held by his fellow physicians, patients, and citizens of the community;

BE IT RESOLVED THAT the sympathy of the members of the Portsmouth Academy of Medicine be extended to the family of the late Matthew C. Glynn, Jr., M.D., and

That copies of this resolution be sent to the family of Dr. Matthew Glynn, Jr., and a copy be spread upon the minutes of this meeting.

PORTSMOUTH ACADEMY OF MEDICINE



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<sup>1</sup>. Sollmann, T.: A Manual of Pharmacology and Its Applications to Therapeutics and Toxicology, ed. 8, Philadelphia, W. B. Saunders Company, 1957, p. 206.

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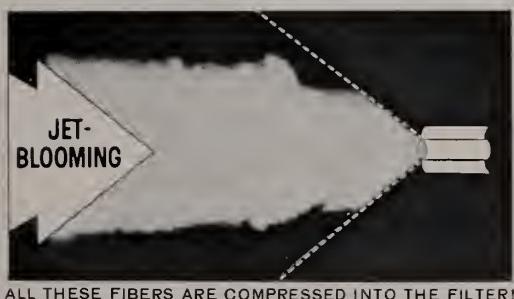


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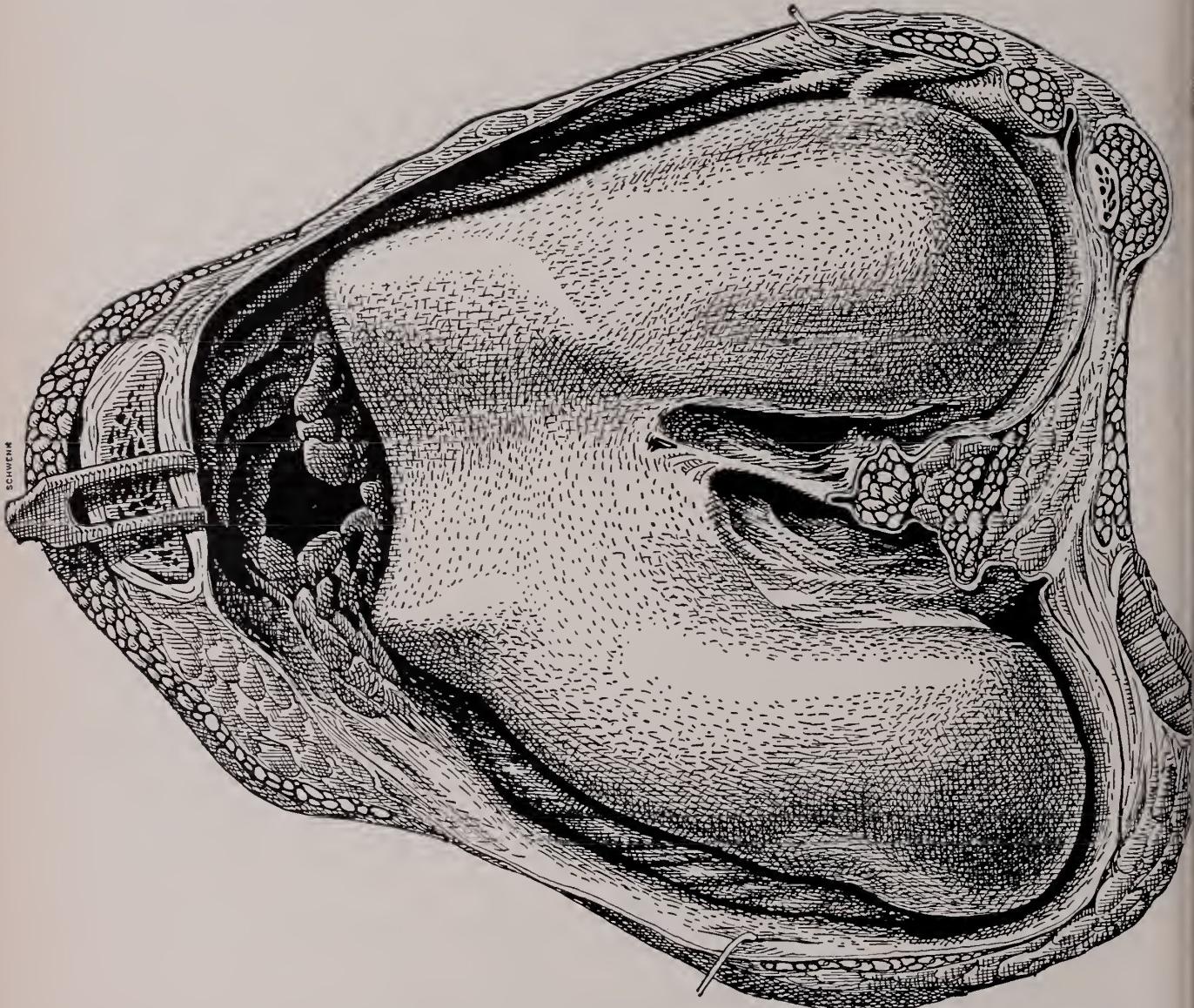
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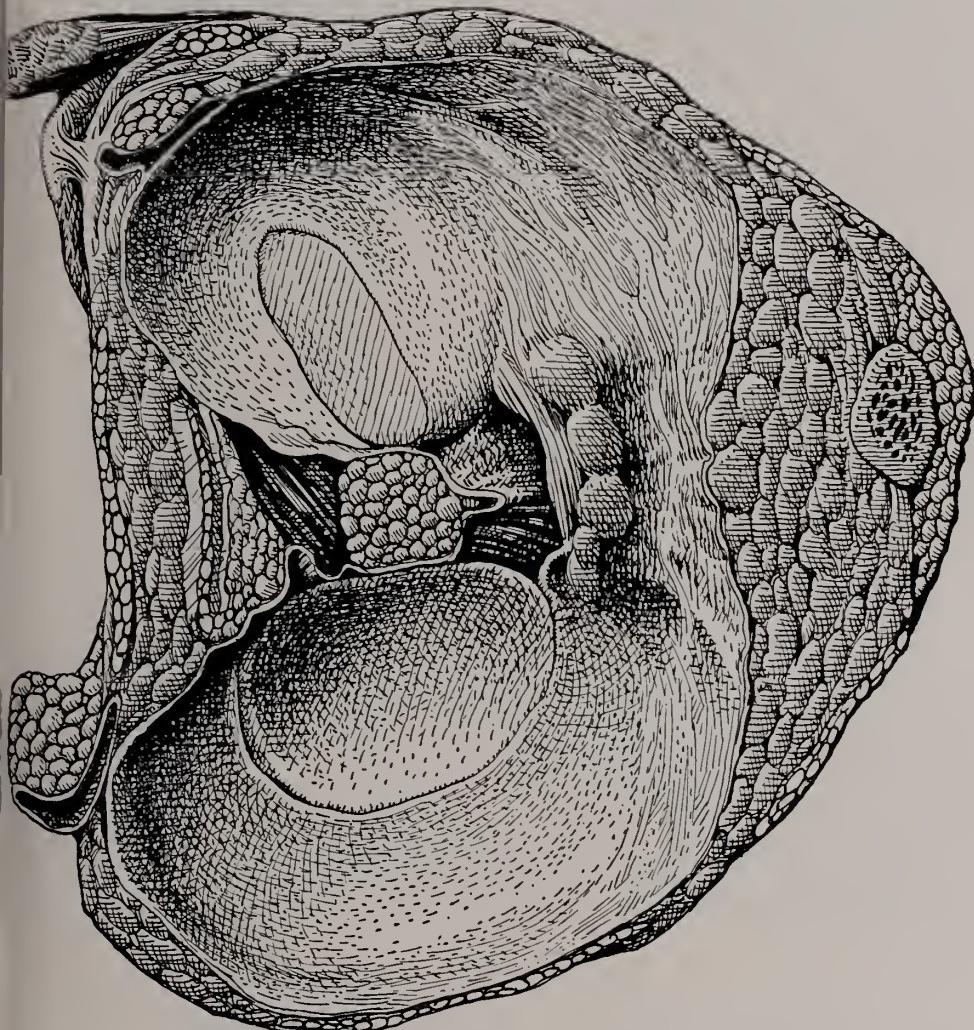
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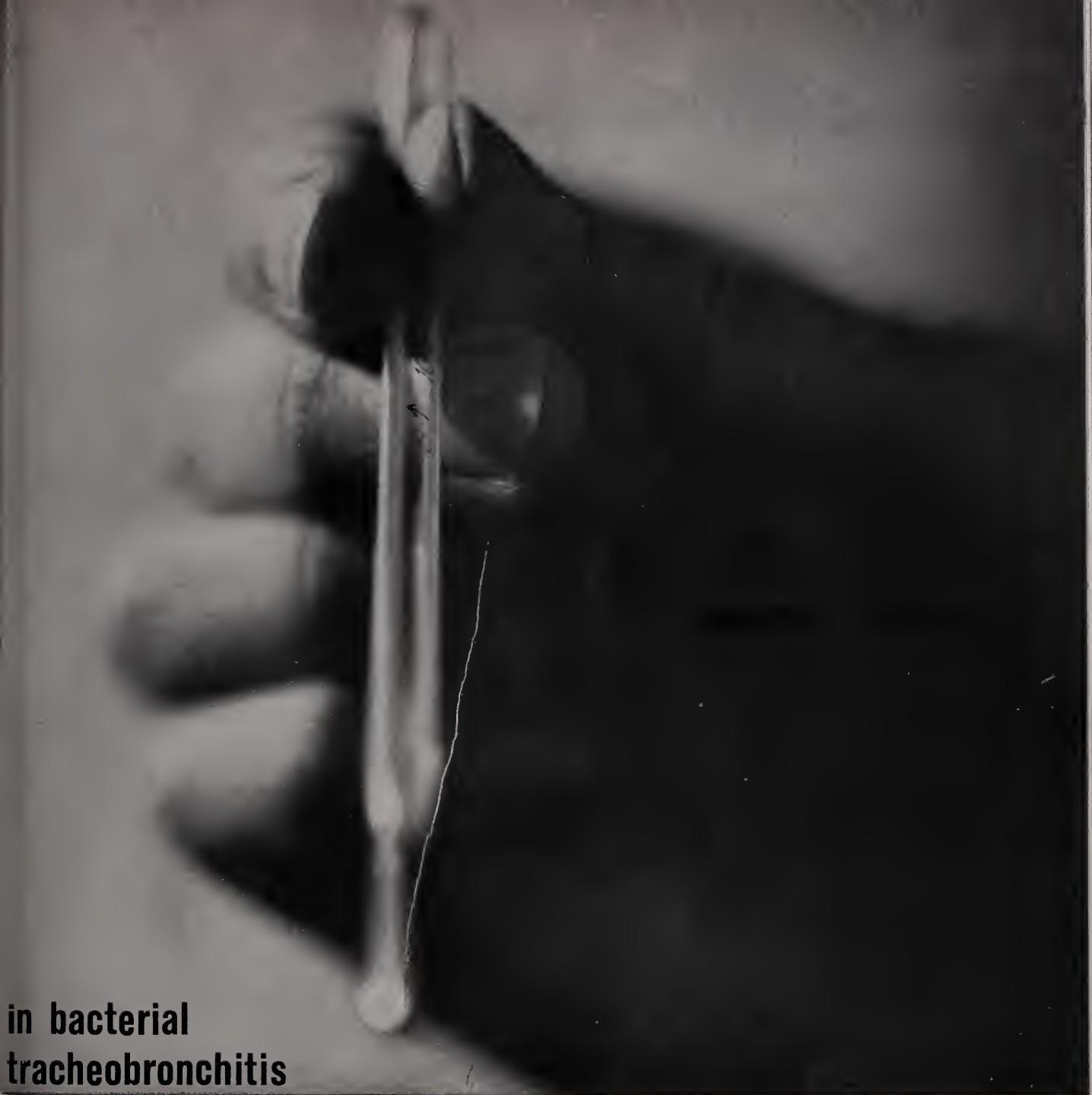
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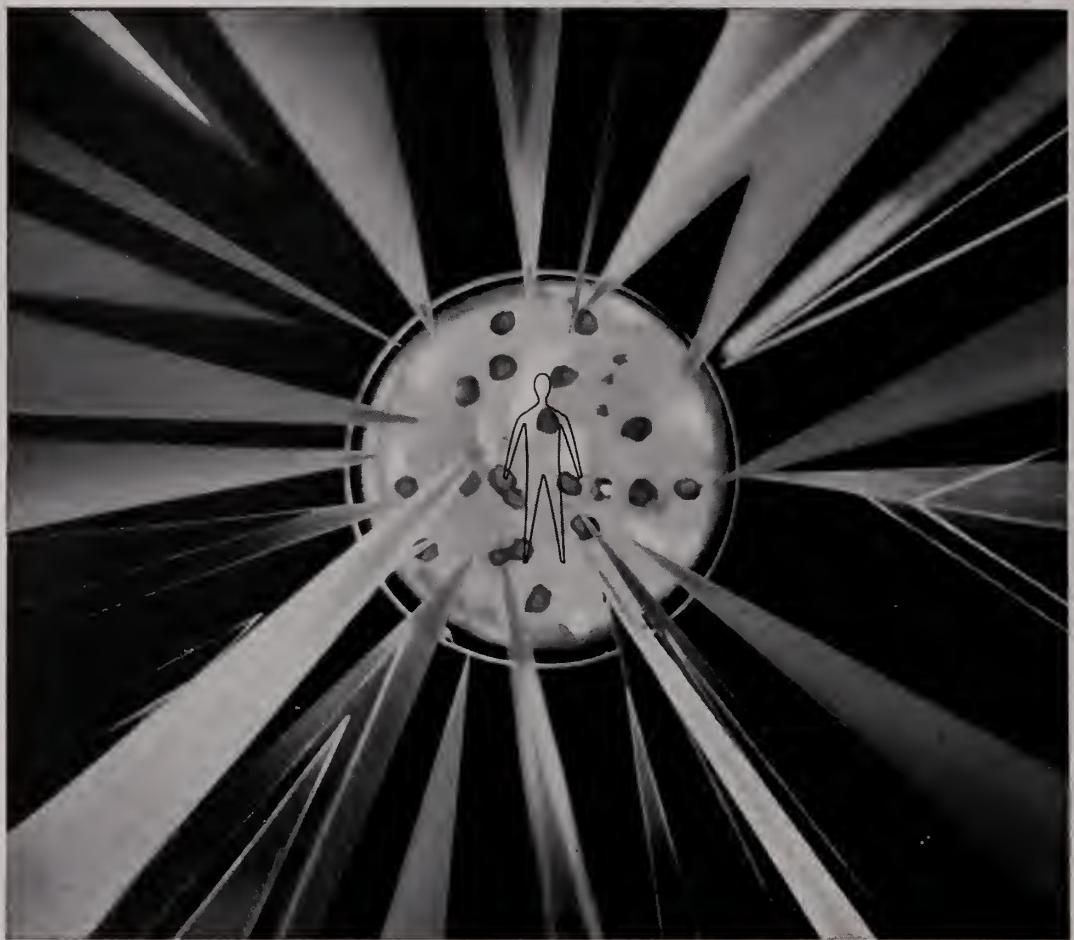
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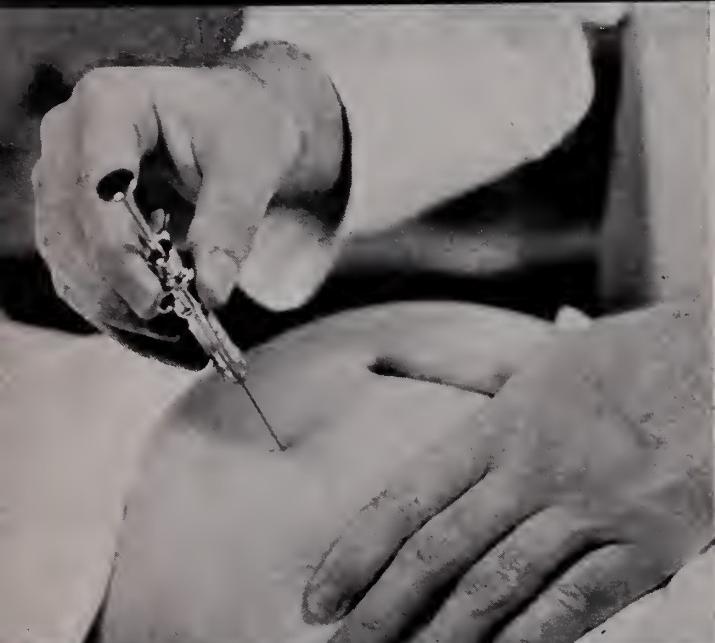
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1. R. Lamb and E. S. Maclean, Penicillin V—A Clinical Assessment After One Year, *Brit. M. J.*, July 27, 1957, p. 191-193.
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1. Meyers, G. B.: Ind. Med. & Surg. 26:3, 1957. 2. Murray,  
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(1) Danowski, T. S.: Diabetes Mellitus, Baltimore, Williams & Wilkins, 1957, p. 239. (2) McCune, W. G.: M. Clin. North America 44:1479, 1960. (3) Ackerman, R. F., et al.: Diabetes 7:398, 1958.

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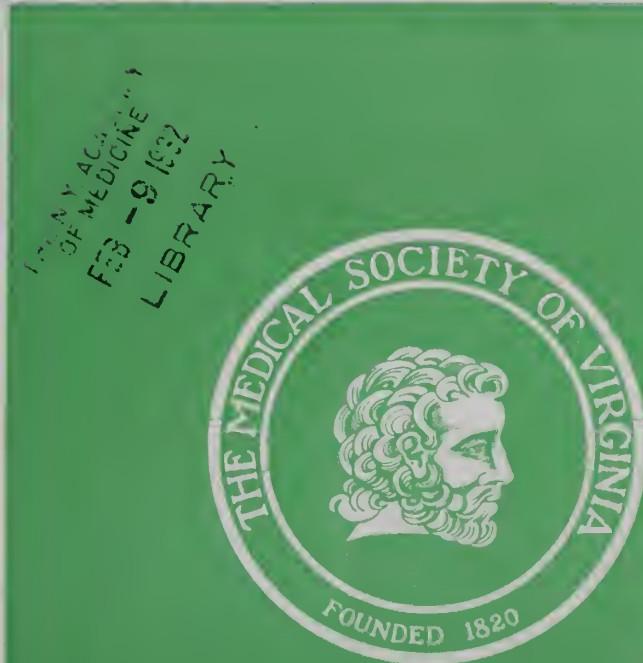


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FEBRUARY, 1962

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**References:** (1) Malone, F. J., Jr.: *Mil. Med.* 125:836, 1960. (2) Martin, W. J.; Nichols, D. R., & Cook, E. N.: *Proc. Staff Meet. Mayo Clin.* 34:187, 1959. (3) Ullman, A.: *Delaware M. J.* 32:97, 1960. (4) Petersdorf, R. G.; Hook, E. W.; Curtin, J. A., & Grossberg, S. E.: *Bull. Johns Hopkins Hosp.* 108:48, 1961. (5) Jolliff, C. R.; Engelhard, W. E.; Ohlsen, J. R.; Heidrick, P. J., & Cain, J. A.: *Antibiotics & Chemother.* 10: 694, 1960. (6) Lind, H. E.: *Am. J. Proctol.* 11:392, 1960.

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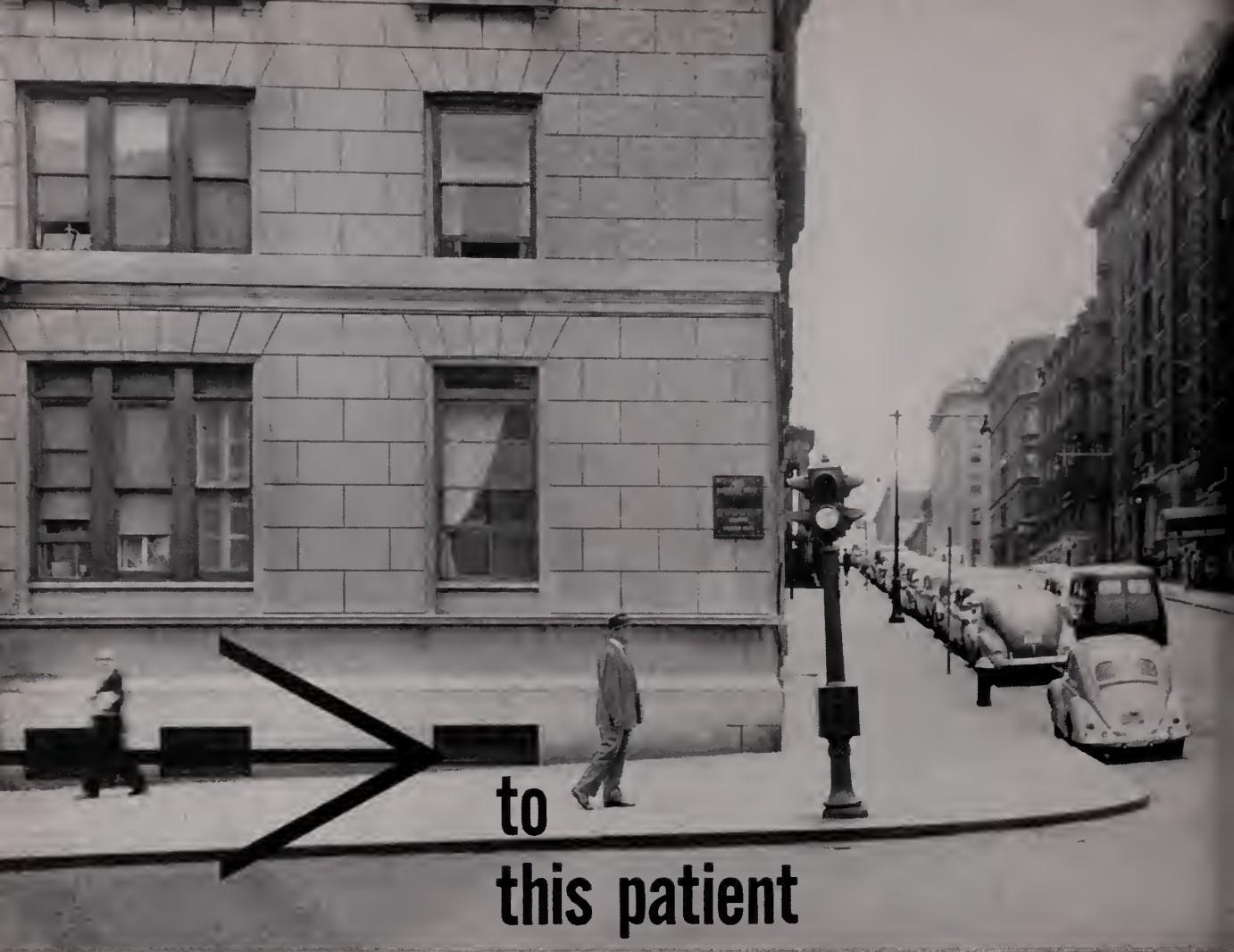
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to  
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**with intermittent claudication  
every block seemed a mile long**

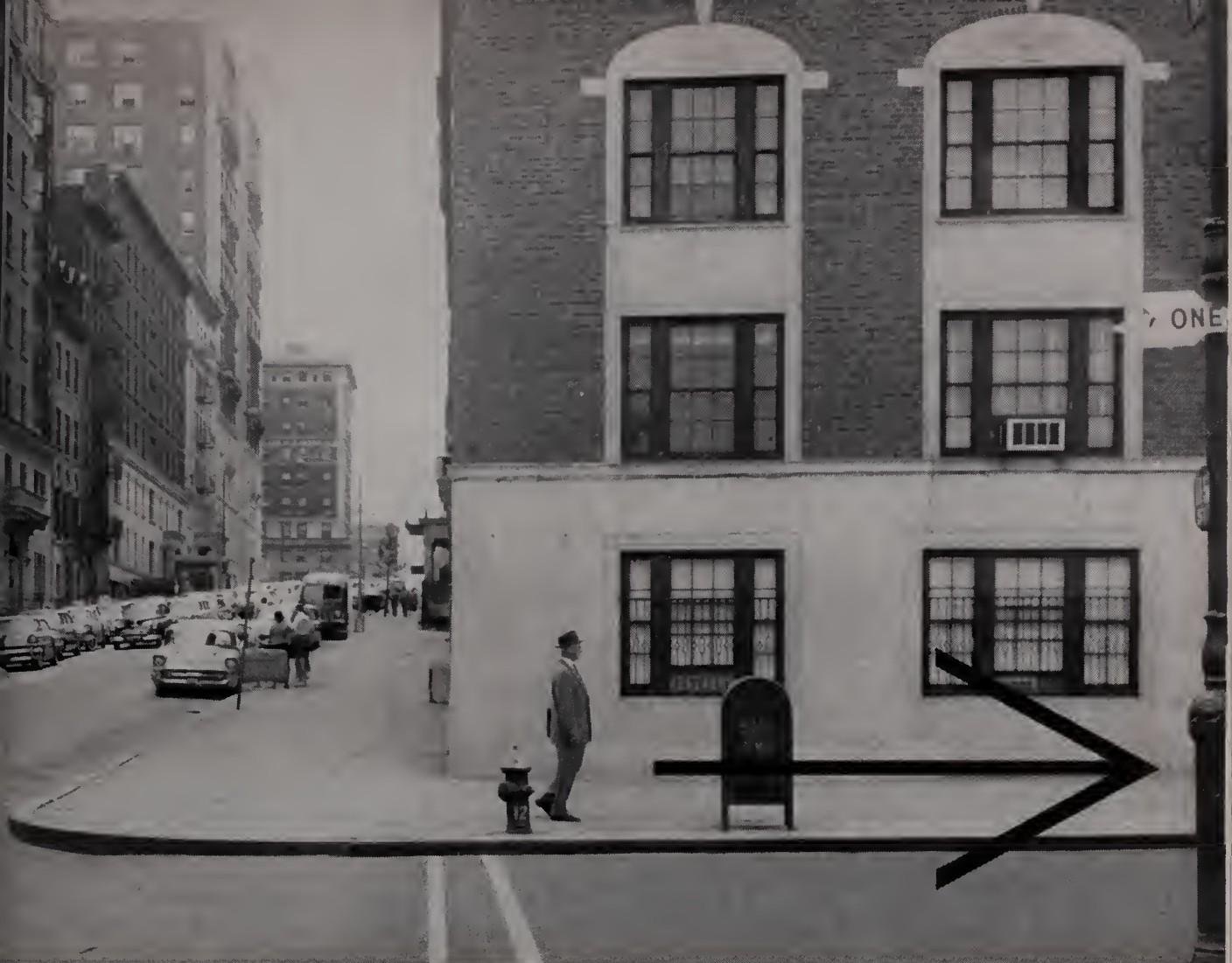
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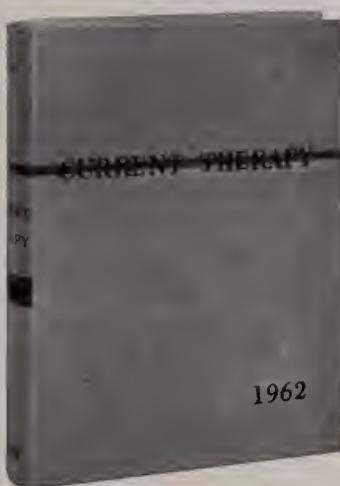
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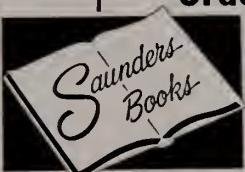
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# **nutrition...present as a modifying or complicating factor in nearly every illness or disease state<sup>1</sup>**

1. Youmans, J. B.: Am. J. Med. 25:659 (Nov.) 1958

**cardiac diseases** "Who can say, for example, whether the patient chronically ill with myocardial failure may not have a poorer myocardium because of a moderate deficiency in the vitamin B-complex? Something is known of the relationship of vitamin C to the intercellular ground substance and repair of tissues. One may speculate upon the effects of a deficiency of this vitamin, short of scurvy, upon the tissues in chronic disease."<sup>2</sup>

2. Kampmeier, R. H.: Am. J. Med. 25:662 (Nov.) 1958.

**arthritis** "It is our practice to prescribe a multiple vitamin preparation to patients with rheumatoid arthritis simply to insure nutritional adequacy . . ."<sup>3</sup>

3. Fernandez-Herlihy, L: Lahey Clinic Bull. 11:12 (July-Sept.) 1958.

**digestive diseases** Symptoms attributable to B-vitamin deficiency are commonly observed in patients on peptic ulcer diets.<sup>4</sup> Daily administration of therapeutic vitamins to patients with hepatitis and cirrhosis is recommended by the National Research Council.<sup>5</sup>

4. Sebrell, W. H.: Am. J. Med. 25:673 (Nov.) 1958. 5. Pollack, H., and Halpern, S. L.: Therapeutic Nutrition, National Academy of Sciences and National Research Council, Washington, D.C., 1952, p. 57.

**degenerative diseases** "Studies by Wexberg, Jolliffe and others have indicated that many of the symptoms attributed in the past to senility or to cerebral arteriosclerosis seem to respond with remarkable speed to the administration of vitamins, particularly niacin and ascorbic acid. These facts indicate that the vitamin reserve of aging persons is lowered, even to the danger point, more than is the case in the average American adult."<sup>6</sup>

6. Overholser, W., and Fong, T.C.C. in Stieglitz, E. J.: Geriatric Medicine, 3rd edition, J. B. Lippincott, Philadelphia, 1954, p. 264.

**infectious diseases** Infections cause a lowering of ascorbic acid levels in the plasma; and the absorption of this vitamin is reduced in diarrheal states.<sup>7</sup>

7. Goldsmith, G. A.: Conference on Vitamin C. The New York Academy of Sciences, New York City, Oct. 7 and 8, 1960. Reported in: Medical Science 8:772 (Dec. 10) 1960.

**diabetes** Diabetics, like all patients on restricted diets, require an extra source of vitamins.<sup>8</sup> "Rigidly limiting the bread intake of the diabetic patient automatically eliminates a large amount of thiamin from the diet. . . . There is some evidence of interference with normal riboflavin utilization during catabolic episodes."<sup>9</sup>

8. Duncan G. G.: Diseases of Metabolism 4th edition W. B. Saunders, Philadelphia, 1959, p. 812. 9. Pollack, H.: Am. J. Med. 25:708 (Nov.) 1958.

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1. R. Lamb and E. S. Maclean, Penicillin V—A Clinical Assessment After One Year, *Brit. M. J.*, July 27, 1957, p. 191-193.
2. J. I. Burn, M. P. Curwen, R. G. Huntsman and R. A. Shooter, A Trial of Penicillin V, *Brit. M. J.*, July 27, 1957, p. 193.
3. J. Macleod, Current Therapeutics, *The Practitioner*, 178:486, April, 1957.
4. W. J. Martin, D. R. Nichols and F. R. Heilman, Observations on Clinical Use of Phenoxyethyl Penicillin (Penicillin V), *J.A.M.A.*, p. 928, March 17, 1956.



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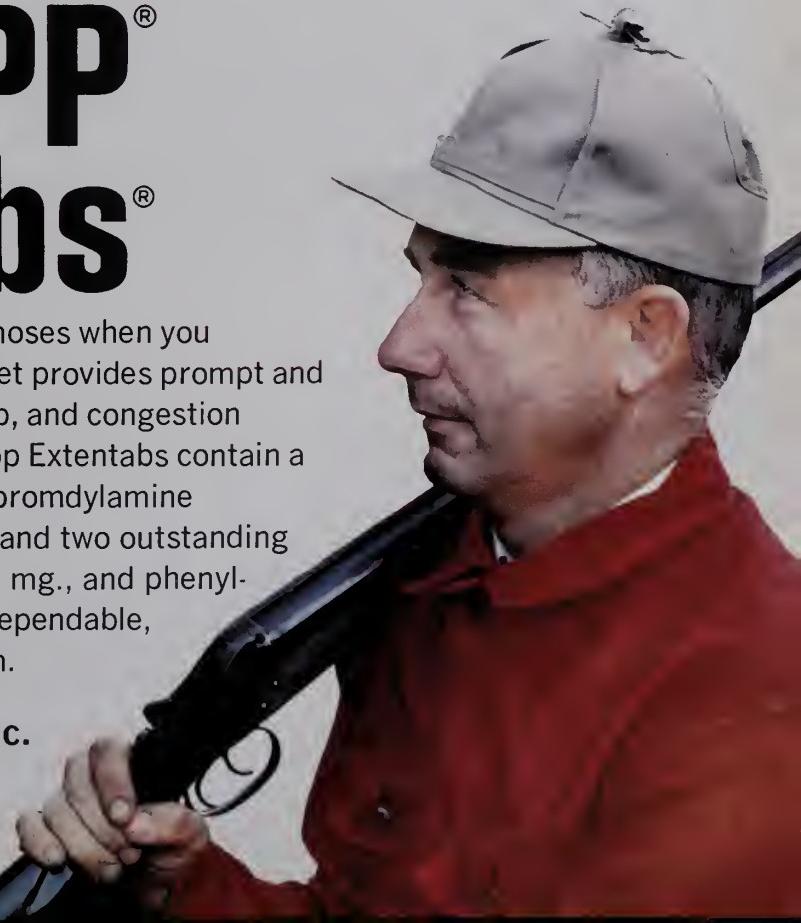
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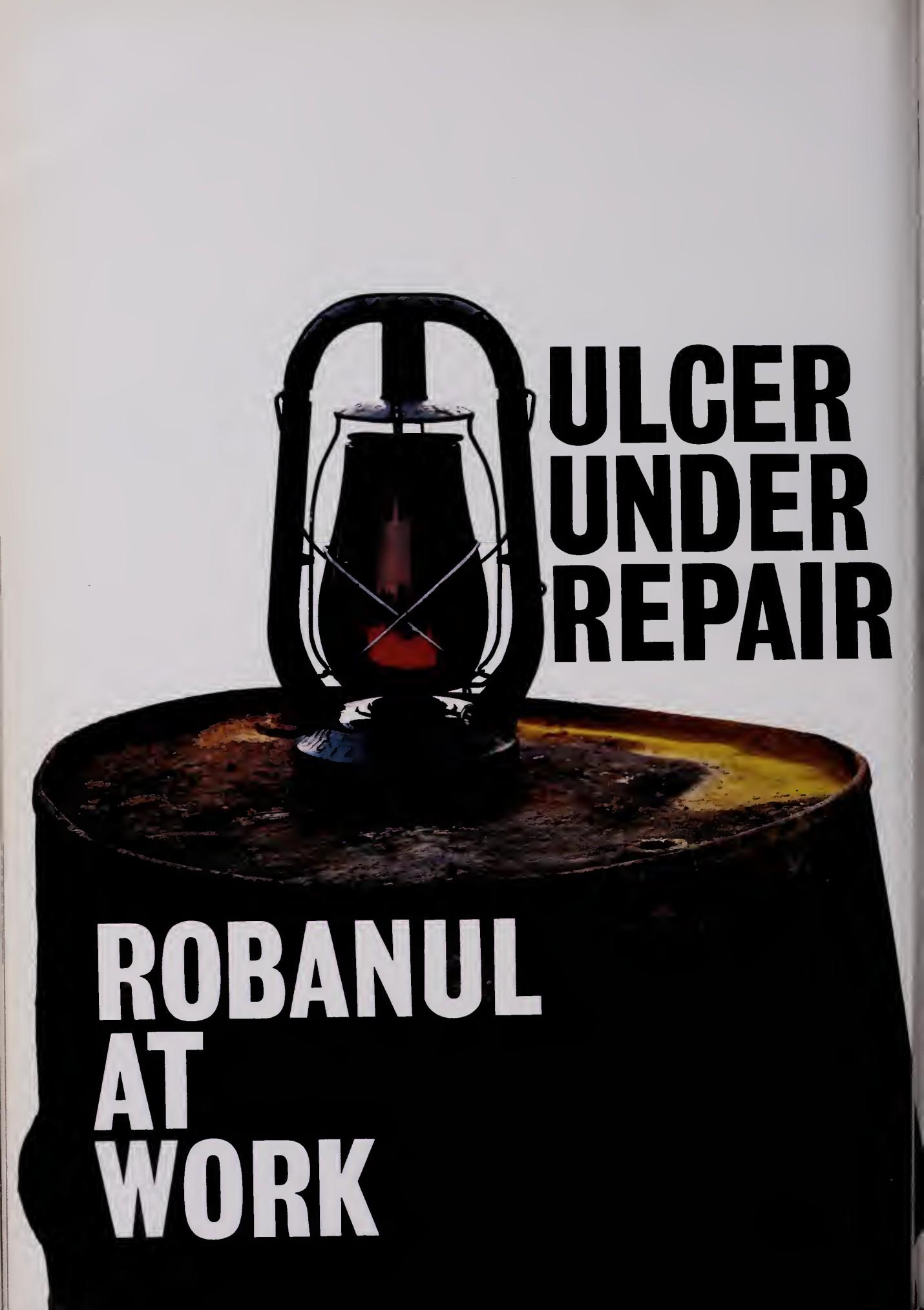
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## Robanul™ signals a major improvement in duodenal ulcer therapy

From Robins research comes Robanul (generically, Glycopyrrolate), first of the "rigid-ring" anticholinergics, representing what may well be the most important advance in anticholinergic chemistry in a decade.

Clinically, both Robanul and Robanul-PH (with phenobarbital) have demonstrated a remarkable ability to provide within 90 minutes—and maintain for 6 to 10 hours—those nearly ideal pharmacologic healing conditions that mean prompt relief of ulcer pain and a successful recovery of your ulcer patient.

There are always important questions about any new therapeutic agent. Below are answers to some of the common ones asked about Robanul:

# ROBANUL™ ROBANUL-PH™

Glycopyrrolate (Robins),  
1.0 mg. per tablet  
(U.S. Pat. No. 2,956,062)

Robanul with phenobarbital,  
16.2 mg. per tablet

### First of all, what does "rigid-ring" mean?

Briefly, this: it describes the use of a fixed pyrrolidine pentagon, or rigid ring, which guarantees a constant 2-carbon distance between reactive parts of the molecule. In line with the "receptor site" concept of the mechanism of action of anticholinergics, this almost inflexible molecule is theoretically more likely to "fit" only certain receptor sites.

### Theories are all right, but is Robanul really more selective?

Yes! Evidence of its selectivity can be seen by the surprising lack of typical secondary anticholinergic effects (dry mouth, blurred vision, etc.) that occur at the effective dosage level of 1 to 4 mg. a day. Out of 499 duodenal and gastric ulcer patients treated at this level in investigative studies, only 4.4% had complaints of moderate to severe effects.

### How is it for reducing gastric acid?

One investigator<sup>1a</sup> found that a 2 mg. dose of Robanul lowered acid secretion 73% in one hour (compared to a basal-hour period) and 84% in two. A 4 mg. dose dropped secretion over 94% in one hour and 97% in two!

### What about acidity, or concentration of acid?

In one study, glycopyrrolate produced significant suppression of pH to 4.5 or higher in 5 of 5 duodenal ulcer patients given a 4 mg. dose, 7 of 8 patients given 2 mg., and 4 of 5 patients given 1 mg.<sup>1b</sup>

### Will Robanul depress gastric hypermotility?

In another study<sup>2</sup> with six subjects Robanul decreased gastric motility in every patient. Within 40 minutes after the administration of 2 mg. of Robanul, the frequency of gastric antral contractions decreased from 1 every 24

seconds to only 1 every 2½ minutes. Young and Sun<sup>1c</sup> found a similar effect. Moreover, their results in 7 patients indicated that Robanul, in a dose of 2 mg., did not produce delay in gastric emptying or intestinal transit.

### What's the best dosage schedule for Robanul?

It should be adjusted for each patient, and this is where Robanul offers another big advantage. Its "titratability" is unmatched among anticholinergic agents. Robanul's potency makes possible a recommended starting dose of only one milligram t.i.d. Yet its selectivity usually permits much leeway for dosage adjustment upward as necessary, to achieve the most effective dose level for each patient while maintaining a low incidence of undesirable effects on other organ systems.

### Is there anything else Robanul does for peptic ulcer?

Much more! For instance, 2 mg. cuts pepsin production about 50% in two hours; 4 mg., about 65%.<sup>1a</sup>... There is evidence that Robanul combats hormonal aspects of gastric secretions as well as vagal in many patients.... Its activity lasts long enough to reduce acid secretion all night long.<sup>3</sup>... Many ulcer patients have remarked about its fast relief of pain....

**One last question:** Why not prescribe Robanul for your next duodenal ulcer patient and see for yourself just exactly how effective it is?

**References:** 1. From the New York Academy of Sciences, Conference on Peptic Ulcer, Oct., 1961. (a) H. C. Moeller. (b) D. C. H. Sun. (c) R. Young and D. C. H. Sun. 2. W. C. Breidenbach: Investigative clinical report, March, 1961. 3. I. A. Feder: Investigative clinical report, May, 1961.

Additional information upon request.

A. H. Robins Company, Inc., Richmond 20, Va.





"All the world's a stage..  
And one man in his time  
plays many parts,  
His acts being seven ages..."\*

\**As You Like It, Act II, Sc. 7*



through all seven ages of man

# VISTARIL®

effective anxiety control  
with a wide margin of safety

in the "frantic forties"—For many patients in their "frantic forties," the pace never slackens—may even accelerate—while tensions multiply and physical resources dwindle. Out of this seedbed of stresses and anxieties grow much of the alcoholism, psychosomatic illness, and sympathetic overactivity of the middle years.

In each of these areas, VISTARIL is often effective alone or as an adjunct to other therapy. For example, in his series of 67 patients, King<sup>1</sup> found that 62 showed remission of anxiety, tension, nervousness and insomnia, as well as alleviation of symptoms associated with various functional and psychophysiological disturbances. He concludes that VISTARIL is well suited for use in the practice of internal medicine.

In the emergent situation, VISTARIL, administered parenterally, is a valuable aid to the physician in managing patients who escape psychic conflict via alcohol. According to Weiner and Bockman,<sup>2</sup> who obtained beneficial results in 81% of 175 patients studied, hydroxyzine (VISTARIL) may well be considered a tranquilizer of choice in the management of the acutely agitated alcoholic.

1. King, J. C.: Int. Rec. Med. 172:669, 1959. 2. Weiner, L. J., and Bockman, A. A.: Sci. Exhibit, A.M.A., Ann. Meet., New York City, June 26-30, 1961.

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## VISTARIL®

VISTARIL, hydroxyzine pamoate (oral) and hydroxyzine hydrochloride (parenteral solution), is a calming agent unrelated chemically to phenothiazine, reserpine, and meprobamate.

VISTARIL acts rapidly in the symptomatic treatment of a variety of neuroses and other emotional disturbances manifested by anxiety, apprehension, or fear—whether occurring alone or complicating a physical illness. The versatility of VISTARIL in clinical indications is matched by wide patient range and a complete complement of dosage forms. The calming effect of VISTARIL does not usually impair discrimination. No toxicity has been reported with the use of VISTARIL at the recommended dosage, and it has a remarkable record of freedom from adverse reactions.

**INDICATIONS:** VISTARIL is effective in premenstrual tension, the menopausal syndrome, tension headaches, alcoholic agitation, dentistry, and as an adjunct to psychotherapy. It is recommended for the management of anxiety associated with organic disturbances, such as digestive disorders, asthma, and dermatoses. Pediatric behavior problems and the emotional illnesses of senility are also effectively treated with VISTARIL.

**ADMINISTRATION AND DOSAGE:** Dosage varies with the state and response of each patient, rather than with weight, and should be individualized for optimum results. The usual adult oral dose ranges from 25 mg. t.i.d. to 100 mg. q.i.d. Usual children's oral dose: under 6 years, 50 mg. daily in divided doses; over 6 years, 50-100 mg. daily in divided doses.

Parenteral dosage for adult psychiatric and emotional emergencies, including acute alcoholism: I.M.—50-100 mg. Stat., and q.4-6h., p.r.n. I.V.—50 mg. Stat., maintain with 25-50 mg. I.V. q.4-6h., p.r.n.

**SIDE EFFECTS:** Drowsiness may occur in some patients; if so, it is usually transitory, disappearing within a few days of continued therapy or upon reduction of dosage. Dryness of mouth may be encountered at higher doses.

**PRECAUTIONS:** Drowsiness may occur in some patients. The potentiating action of hydroxyzine should be taken into account when the drug is used in conjunction with central nervous system depressants. Do not exceed 1 cc. per minute I.V. Do not give over 100 mg. per dose I.V. Parenteral therapy is usually for 24-48 hours, except when, in the judgment of the physician, longer-term therapy by this route is desirable.

**SUPPLIED:** VISTARIL Parenteral Solution (hydroxyzine hydrochloride)—10 cc. vials, 25 mg. per cc. and 50 mg. per cc.; 2 cc. ampules, 50 mg. per cc. VISTARIL Capsules (hydroxyzine pamoate)—25, 50, and 100 mg. VISTARIL Oral Suspension (hydroxyzine pamoate)—25 mg. per 5 cc. teaspoonful.

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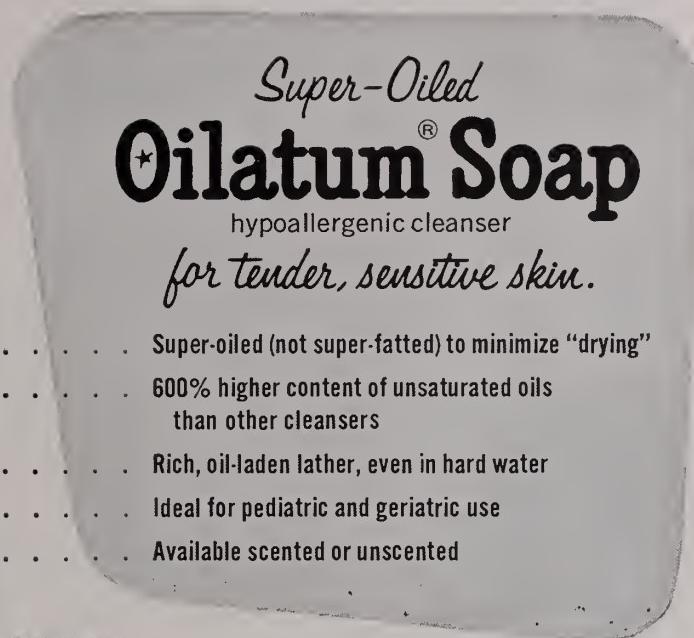
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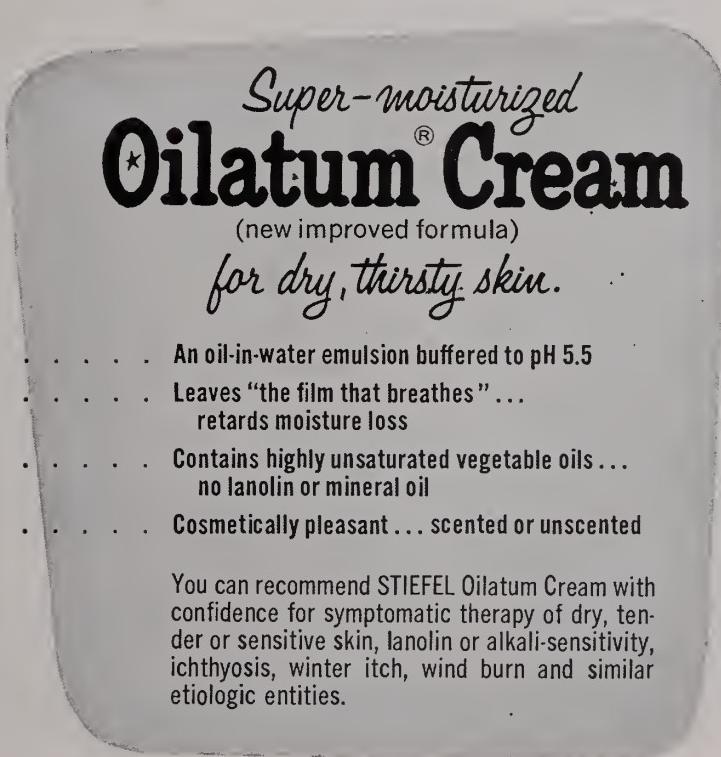
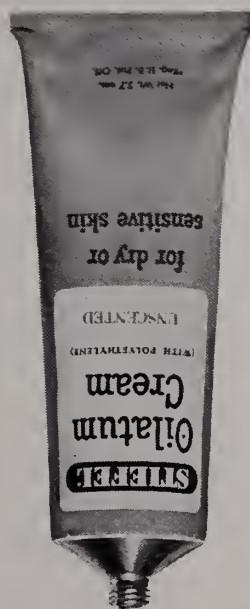
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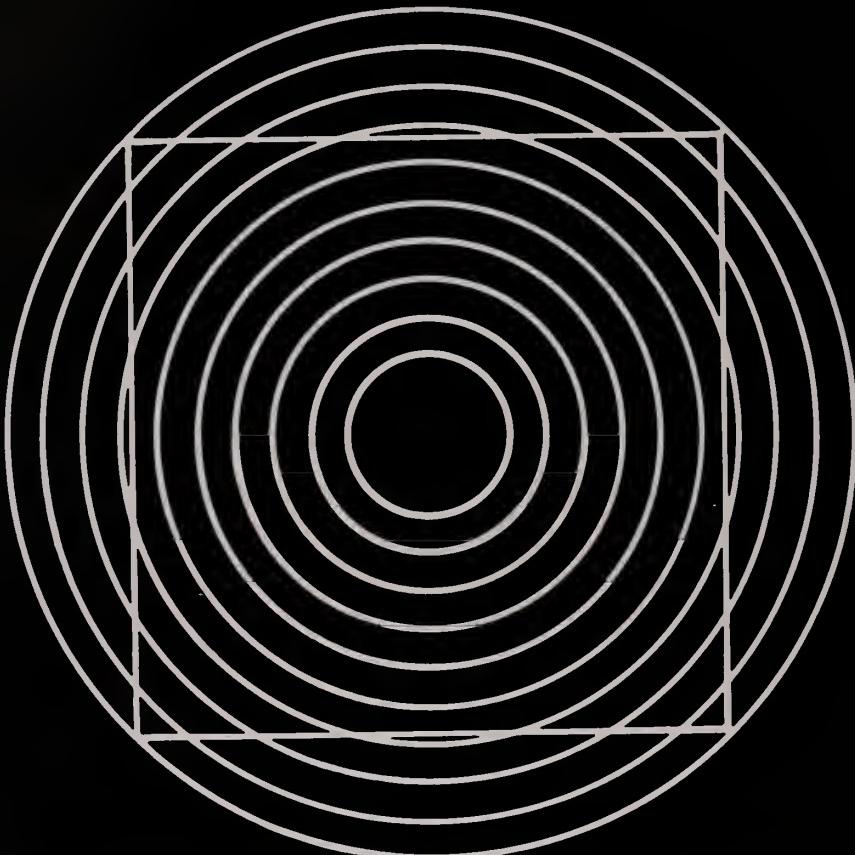
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1. Griffith, R. S.: Antibiotic Med. & Clin. Therapy, 7:129, 1960.

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# *The Virginia* MEDICAL MONTHLY

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February, 1962

VOL. 89, No. 2  
Whole No. 1317

## Guest Editorial . . .

### Recent Advances in the Treatment of Melanoma

WHILE THE EXTENSIVE SEARCH for adequate anti-cancer drugs continues, methods permitting the instillation of tumoricidal agents into the tourniquet-isolated circulation of cancer-ridden areas have emerged from the experimental into the therapeutic fields of medicine. With the exception of one particular drug-tumor combination, the mechanical techniques involved have seemingly moved far ahead of the pharmaceutical agents themselves in producing desired results. The one combination of particular note is melanoma, often a widely disseminating tumor, and phenylalanine mustard (PAM), a drug which in many reported cases has produced total elimination of regionally disseminated melanoma for months and sometimes years.<sup>1</sup> This is a signal advance in the treatment of malignant disease, but future "break-throughs" will most certainly depend upon the results of further cancer chemotherapy research and the progress of studies in tumor biology and immunology.

In 1950 Klopp<sup>2</sup> and his associates first reported the intra-arterial administration of an anti-cancer agent, nitrogen mustard, for the treatment of regionally advanced tumors. Leakage of this potent agent into the general circulation limited dose levels which might have produced more complete tumor regression. Bone marrow depression, a frequent complication of cancer chemotherapy, often prevented continuation of such non-isolated infusion techniques. By confining the circulation of an extremity riddled with cancer, however, Creech and his co-workers were able to locally administer anti-tumor agents by arterio-venous means, thus cutting down enormously on systemic effects. The fact that melanoma often occurs in disseminated form in an extremity led to the

utilization by this modality of phenylalanine mustard (PAM) in these otherwise non-surgical settings. One of Creech's patients with extensive satellitosis in a single extremity has remained well and free of disease for over three years following this form of treatment. (Excellent control of melanoma was brought about in 55% of Creech's locally advanced cases.)

Realizing the potential effectiveness of this technique in combination with radical surgery for *early* melanoma, Stehlin,<sup>3</sup> Creech and others have advocated its well-controlled application in the hopes of improving present cure-rates. The sensitivity of melanoma to phenylalanine mustard certainly suggests the addition of this drug therapy to modern, ablative approaches. Unfortunately, the leakage factor mentioned may often be a deterrent to the routine administration of such toxic agents. The isolation-perfusion method definitely eliminates *some* of the dangers of bone marrow depression if the melanotic metastases are happily confined to the distal portions of an extremity. As can be imagined, this latter picture is all too infrequently encountered and metastases in the proximal limb may prevent adequate isolation. In these and possibly all instances, bone marrow extraction can be utilized prior to therapy, followed by the intra-venous administration of this vital material after dissipation of the agent's effectiveness. It has thus been possible to modify the results of marrow toxicity, permitting the use of phenylalanine mustard even in patients whose melanoma metastases have spread beyond the confines of an extremity. In the future, if *less* dangerous derivatives of PAM are discovered, the control of even systemically disseminated melanoma may become a distinct possibility.

WILLIAM R. NELSON, M.D.

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1200 East Broad Street  
Richmond, Virginia

# Modern Trends in Psychiatry

FRANCIS J. BRACELAND, M.D.  
Hartford, Connecticut

*A distinguished psychiatrist reviews the past and outlines some aspects of the present and future status of the private psychiatric hospital.*

I CANNOT begin my discussion without pausing to pay tribute to the distinguished founders of this institution, J. K. Hall and Paul V. Anderson; to the dedicated men who worked with and followed them; and to all of you who have brought it to its present status and celebrate the fiftieth anniversary of your founding. You were founded at a time when the world was, to all external purposes, quiet and comfortable, though it was seething underneath. In the minds of most people there was little thought of the holocaust which was soon to overtake them and again to be repeated three decades later. Strangely, it was out of this latter world-wide conflagration that modern psychiatry was to get its strongest impetus, for it was in wartime that the stark lesson was learned that a man, disabled by emotional upset, is a casualty just as surely as is a man wounded by an enemy shell. The only difference seemed to be in wartime that the emotional casualties outnumbered the others by far and constituted a serious problem for the military.

When your hospital was founded, there were no private practitioners of psychiatry. True enough, there were alienists and neu-

rologists, the former rarely venturing forth from the grim fortresses in which they labored, except to assemble periodically to discuss their problems or present testimony in courts of law. It was only on the latter occasions that anyone even bothered to listen to them, for psychiatry had become identified to a great degree with large custodial institutions and the myth of the incurability of mental disorders was abroad in the land.

The path by which sick people traveled to mental hospitals was a difficult one and it has changed very little today. Patients still travel unwillingly to mental hospitals in the same outworn legal and social vehicles which have been used for decades and decades. Legalistic, cumbersome, unfeeling, these admission procedures in most parts of the country are traumatic in themselves. The mental hospital of today and of the future should certainly receive its patients by means of legislation based upon modern psychiatric knowledge, rather than upon that mixture of confusion, convenience and misunderstanding which is now its trademark.

Strangely, now at the time of this celebration the distinguished Senator Ervin, a relative and friend of J. K. Hall, is the chairman of a Senate committee seeking to bring order out of the chaos by a study of the rights of the mentally ill.

In the days when your hospital began, institutions of similar stamp—the private hospitals which spanned the east coast of the nation—were regarded by their founders as noble institutions. It was institutions like your own and the seven large Eastern hospitals which kept psychiatry on a high plane during a period when no one had any

time for it. Psychiatry, even when this hospital was opened, made little imprint upon the medical world and none at all upon the world of ideas. Our forebears of those days were truly alienists—alien even to their medical colleagues.

Yet, the great innovators of that day—physicians dedicated to the humane care of patients—worked on the premise that in mental disease, as in any disease, normal function was still there, struggling to assert itself; that in treatment the normal elements must be strengthened and made preponderant, if possible; and that in all instances the patient must be tended and supported so as to reduce to a minimum the attrition caused by the disease. In pursuance of this philosophy, even then, they banned the use of restraint, fought for what is now called “the open hospital”, established a therapeutic environment, and cultivated the close doctor-patient relationship. Today we are rediscovering these early ideals, lost during the long era of custodial psychiatry. As asylum conditions deteriorated, the old moral treatment became virtually impossible and we were a long time overcoming the reputation which we acquired in those years, a reputation acquired unfairly in most instances.

Unfortunately, in an important segment of certifiable mental illnesses there is a trend toward chronicity in the absence of active treatment. Therefore, in the past, as the chronic case load mounted in the large public institutions, the assumed hopelessness of the psychiatric problem reinforced the traditional ostracizing of society toward “lunacy”. People were thankful that asylums were located in remote places, chosen originally, ironically enough, for the presumed benefits patients would derive in the tranquil and scenic countryside. Psychiatry, like its patients, was cut off from the community and from other branches of medicine. To elect a psychiatric career in the days in which your founders made the choice was a risky undertaking, in more ways than

one. Yet, there were great physicians who made that choice, taking care of their patients within the severe limitations imposed upon them, observing the patterns of mental illness, the courses and the outcomes, and searching out possible causes and contributing factors. Today, interestingly enough, it is the leaders of the class in medical schools who are choosing careers in psychiatry and psychiatric residency training programs are increasing yearly.

When psychiatry sought to emerge from its isolation about a half century ago, it had accumulated much objective information. Armed with the monumental coordinating work of Kraepelin, it thought it looked like a scientific discipline, despite the fact that Kraepelinian psychiatry admittedly was therapeutically inert. That it needed a dynamic approach to combat the prevailing therapeutic nihilism is recognized now. This dynamic impetus soon was to come by way of psychoanalysis and psychobiology against considerable opposition from the more organically oriented members of the specialty. In the meantime, medicine, launched on its brightest era of scientific accomplishment, looked askance at anything that could not be percussed, auscultated, or verified in the laboratory. It could hardly be blamed for its suspicion of a discipline which was the most unscientific of all and, worse than that, that discipline was now in danger of contamination by what seemed to be an eccentric, if not a destructive, psychology. To make the situation more complicated, for a lengthy period the noise emanating from various warring sects concealed the fact that important discoveries were being made in different psychiatric camps, discoveries which eventually would advance the cause of clinical psychiatry to its present heights.

The advent of the American Board of Psychiatry and Neurology in the thirties provided one great stimulus for the integration of psychiatric knowledge and the setting of professional standards. This, to-

gether with the introduction of major physical methods of treatment for schizophrenic and affective psychoses and more skillful psychotherapeutic techniques in general, placed psychiatry in a position to demonstrate its usefulness when the holocaust of World War II began. Scientific medicine, notably effective in the treatment and prevention of disease and infections and in the management of wounds and injuries, was completely helpless when confronted with emotional casualties in war time. Its vaunted advances were of little use. It was in this setting that the psychiatrist came into his own, for he not only intervened and prevented many serious breakdowns, but also he often restored to active duty men who otherwise would have been lost. Here, in the crisis of war, the psychiatrist demonstrated that, in dealing with diseases of the mind and with emotions gone awry, one need not cease to be a physician and that the doctor does not deal with the body nor emotions alone, but rather with man in his entirety.

Since World War II there has been increasing rapprochement between medicine and psychiatry and this is the determining influence of the future. To meet the far-flung mental health needs of an advancing social order, it has been amply demonstrated that there must be a sustained cooperative effort between psychiatry and community medicine and their respective institutions and contributing disciplines. The practice of medicine and the practice of psychiatry are both undergoing dramatic changes. The greater the curative and preventive accomplishments of medicine, the clearer it becomes that health and well being are not assured by the absence of organic disease, infections or injuries. Actually, a large part of medicine's problems has psychiatric implications. Little need be said here to emphasize the fact that many somatic aberrations may be based upon or aggravated by disturbed emotions, or that a wide range of psychiatric disorders can be masked by

somatic complaints. A recent survey has indicated that a large percentage of general medicine has psychiatric components and among the participating physicians the feeling was that they could handle many of their psychiatric problems themselves. If this be true, then the growing responsibility for psychiatric problems on the part of community physicians points to an encouraging trend in future practice.

It is interesting to pause here and realize that, not only have conditions changed since the opening of your hospital, but the practice of medicine has changed and, indeed, disease itself has changed. Dubos is of the opinion that, despite our advances, the burden of disease is not likely to decrease in the future:

Whatever the methods of control can and will be found. . . . I believe nevertheless that disease will remain a problem and merely will change its manifestations according to social circumstances. Threats to health are inescapable accompaniments of life.<sup>1</sup>

Who would have dreamt a generation ago, he asks, that the hypervitaminoses would become a common form of nutritional disease in the Western world; that tobacco and x-rays would be suspect in certain types of cancer; that the introduction of detergents and various synthetics would increase the incidence of allergies; that advances in chemotherapy and other procedures would create a new staphylococcus pathology; that alcoholism would be widespread in the Western world; and that patients with all forms of iatrogenic diseases would occupy such a large number of beds in the modern hospital?

We might note ourselves how the illnesses which we see now in mental hospitals differ from those of several decades ago, to say nothing of their difference from the early days of your hospital. It is improbable that you see any instances of Paresis or CNS lues, which used to furnish ten per cent of the patient population in mental institutions. Instead of bizarre forms of hysteria, like

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1. Rene Dubos, *Daedalus*, Spring 1960.

one used to see, you encounter anxiety in all of its forms. The simple, hebephrenic, and catatonic forms of schizophrenia, with their dramatic manifestations, seem to be in eclipse and you probably see the undifferentiated and the paranoid forms for the most part.

Depression is probably your stock in trade, as it is in most hospitals—melancholy, in all of its forms, open and disguised; depression in the middle aged, who now live long enough to get it, and in the older age groups, who are treated shamefully in this culture. Then, too, you see now many young folks with character disorders—all too many in fact. Old folks come in profusion and sadly — individuals who have done fine work, raised excellent families, and now are fated to end ingloriously with senile psychoses.

You may expect that disease as we see it will change still more. As technology advances, new problems will arise and it is our task — yours and mine — to remain abreast of all changes and be ready to meet the pathological emotional problems which will rise in their wake.

In the future an important part of psychiatry necessarily will be community-based. Hitherto, clinical psychiatry has been largely hospital psychiatry. The structure of large mental hospitals, though vastly improved of late, still does not permit the most effective utilization of psychiatric knowledge. Nor can this be expected of it in the immediate future. Much of the heavy financial outlay required for the maintenance of these hospitals has to be used for care rather than active treatment. With the explosive birth rate of the post-war years, the implications of this situation have become self-evident. The Joint Commission has just noted that only 20 per cent of the state hospitals have availed themselves of the innovations which would make them treatment rather than custodial institutions.

Fortunately, at the present time the mounting census curves of public mental

hospitals have apparently been arrested. This is more evident in some states than in others, but in any event we are probably close to 50,000 patients short of the number expected had the curves proceeded as they seemed destined to run. This reduction, ascribed by some to the influence of the new drugs, is in reality more than that, for it was apparent for a full year before the new drugs appeared on the scene. Actually, mental hospital admission rates are up; yet patients stay for shorter periods of time. Earlier some of these patients might have drifted into chronicity. The new drugs have made a difference, of course, but so also has the change of philosophy in these institutions, with their emphasis on the therapeutic community, rehabilitation procedures, active treatment, and early discharge whenever possible.

What we are seeing now is a trend to use the mental hospital, not as the one and only service available to the psychiatric patient, but as *one* of the facilities available to him, depending on his needs and his condition. This trend has been variously determined. First, as already mentioned, community medicine is more alert to psychiatric problems, more disposed to handle those within its competency, and to refer others to the appropriate sources of assistance at the opportune time. Second, there has been a rise in the number of psychiatrists in private practice in some of the large urban areas where so many psychiatric problems are always found and where, in all probability, they are often engendered. With a more favorable distribution of these specialists, there should be further favorable impact on the state hospital situation. Of very great importance is the rise in the number of psychiatric units in general hospitals. The acceleration of general hospital psychiatry will make a great difference in mental health problems, indeed in many medical problems, in the years ahead.

Nationwide there is a growing appreciation of the need for more community serv-

ice clinics, guidance centers, and general hospital outpatient, as well as inpatient, facilities. The provision of such services will do much to prevent the chronicity of severe mental illness. For many years psychiatry has emphasized the value of early diagnosis and early treatment. With further public education, with the provision of community facilities for early treatment and for rehabilitation following short-term hospital treatment, patients and families will be more inclined to seek help early rather than late. Despite the fact that with modern treatment methods even patients with long-standing illnesses are being helped, sometimes to the point of social remission, it is in the early stages of illness that the most effective treatment can be given, with the best outlook for future stability. Brief hospitalization is desirable for reasons other than economy and the lightening of the load of the mental hospital; we have no need of enumerating these reasons here.

I forebear to say too much more about the recently published report of the Joint Commission on Mental Health and Mental Illness. It is a warm farsighted document, daring in many respects; it is a true Magna Carta for the mentally ill. It looks forward to the next ten years; it will cause a furor, but a furor needs to be caused, for too long have mentally ill patients gotten the worst of it and been treated contumeliously. Among the strongest of its dicta, the report urges an immediate lessening in the size of state hospitals, pointing to the time when none of them will have more than 1000 patients. As for those large crowded institutions already extant, a suggestion is made that they be separated into different units, so that patients will not become lost in them and that they become hospitals for patients with all of the long-term illnesses.

Gradually, in the future, we are sure to see an upsurge in the building of small branch mental institutions which, while they are satellites of the state hospital, are closely related to the local medical center.

A mental hospital built in the community would be more like any other community hospital and the community's acceptance and support would be more readily forthcoming. To such a branch hospital would accrue the advantages of the community's social agencies. Its close proximity to the local medical center would make unnecessary the expensive duplication of certain diagnostic, treatment and surgical facilities and would exclude the dissipation of psychiatric effort on medical problems which ought to be handled by other physicians. Always and ever, however, while this transition is taking place, one must keep in mind the patients who still remain in the state hospitals and must never do anything which will lead to neglecting them or skimping or in any way forgetting them.

One word of caution needs to be uttered here—the simple return of more of the responsibility for the care of the mentally ill to the community will not of itself solve the problem; the community must be ready for this new task and willing to enter into it as a humanitarian venture. All too frequently in the past these patients have been "the last to benefit in good times and the first to suffer in bad times."

One can safely predict the rise of day and night hospitals and the increased utilization of the so-called intermediate or halfway houses. The day care center is the logical development for the mental patient after the outpatient department. Only when a patient cannot be handled on an outpatient level with the help of day care, would it be necessary to resort to twenty-four-hour hospitalization. The above mentioned facilities would also be available to patients after discharge from the mental hospital. The policy of brief hospitalization cannot be expected to pay off unless the patient is able to maintain his gains in the community. It is essential, therefore, that he be prepared throughout the period of hospitalization for the problems he will meet when he goes out and, equally important, there is the prepara-

tion of the family and the community for the return of the patient. There is little use in giving the patient the advantage of the best in rehabilitation procedures, if the family or the community will not receive him when he recovers. To slight the returning patient, to denigrate him, to render him unwelcome, is to cause him to regress and even to prefer the hospital to the community which rejects him. Hence the need for a variety of rehabilitation facilities in the community: halfway houses, foster home care, day and night hospitals care, sheltered workshops, outpatient clinics, and above all, people and places within the community where patients can turn for help when they need it.

In the future there necessarily will be greater provision for psychiatric emergency service in the community. Some of it may be along the pattern of Querido in Amsterdam, where a psychiatrist is available 24 hours a day to go into the home itself to apply whatever emotional help is needed or, if necessary, to determine whether hospital care is indicated. If it should be, then the doctor solicits the patient's cooperation to this end. A more extensive effort will probably be along lines already apparent: the provision of psychiatric emergency service in the community psychiatric clinic and small private hospitals like your own. This is obviously of prime importance. Treatment at the moment of crisis often pays off more than at any time thereafter, for it tends to prevent a serious long-term illness. The psychiatric clinic should be made flexible enough to handle emergencies as they arise on a twenty-four hour basis, flexible enough also to permit follow-up care, so that the patient-doctor contact may be maintained, even if briefly and intermittently. All of this is paradoxical indeed. General medicine is moving gradually to a form of hospital practice, at great cost to itself as far as the patient's regard and affection are concerned. Psychiatry, which was once practiced solely in the hospitals, is

now moving slowly out of the hospital and into the office, the clinic and the patient's home.

Quite evidently, then, there is a widespread effort to rise above the difficulties which have always militated against the recovery of psychiatric patients and in this lies hope for the future. Therapeutic advances have come rapidly in the last 25 years, and more can be expected. Undoubtedly biochemistry and pharmacology will contribute their further leavens. We have found drugs to assist in the control of anxiety and agitation and just now are finding potent drugs for use in the depressions. All these things together, plus other technological advances—the fruits of research—will contribute to the further lessening of the population of the large mental hospital. Whether further understanding of the functional psychoses will be our good fortune, it is not possible to foresee. Though physical agents are available to control the symptoms in many instances, no physical cause for them has been uncovered, despite assiduous exploration of innumerable paths and by-paths. It is felt by many that a purely mental conception of those psychoses will yield the greatest harvest. In any event, we can look forward to clinical advances in both somatic and psychotherapeutic treatment, either of which or a combination of which should reduce the number of patients incarcerated. Hopefully, also, we will find a way to cut down the great human waste which abandonment of our older age group to idleness and dependency brings in its wake. We know that many of their symptoms, though they may appear organically determined, are actually caused by depression and hopelessness, the result of the way in which the culture neglects them.

Just as we are moving toward a more community based psychiatry and toward a psychiatry increasingly integrated with medicine, we are reaching for a more complete psychiatry, in which the humanistic point of view is ever in our minds. Encom-

passing the insights provided by the social sciences and cultural anthropology, psychiatry is now tending toward a broadness of doctrine, exempt from the rigid exclusionary views that led us astray repeatedly in bygone years. What, you may ask, is your role in all of these things which are to come? What is the future of the small private hospital? Where is it going? What will its mission be? Your mission depends upon yourselves, even as that of our own similar institution depends on our activities. As long as you maintain your present superior standards, people will bring loved ones to you for treatment.

Romantic as the idea may seem and important as is the role which wards in general hospitals play, they do not now and cannot provide the answer to the problem. They are geared to the care of the physically sick; the fact that man has a psyche intimately tied up with his body is sometimes disregarded or regarded as an unfortunate complication put in to annoy doctors. Your function is clear: general excellence and a dedicated devotion to each individual patient. As psychiatry moves into the community, you must move with it; without you and your experienced hand, there are no stops between the general and the state hospital. You represent and hold a precious commodity, one that is sadly needed. I speak of an expert staff, fully equipped to handle illnesses which are indeed distressing. You must act as the central educational center and your lines of communication must be with every segment of psychiatric practice. You will be slow to follow innovations, but quick to encompass all new but tried methods of relieving man's distress. As a research and educational institution, you may also prosper but, whatever you do, you must move forward; to hesitate or to stop is to slip backward and that is unthinkable.

These are some of the changes which we can envision; they are but part of the vast over-all changes which lie before psychiatry and each of the sciences. In view of the

infinity of things to be discovered, clarified and understood on this earth, new questions always arise in the wake of each advance, and never is a need supplied but that another springs up to replace it. The new intellectual era on which we are embarked, with all of its promise and all of its danger, will affect every aspect of our lives—economic, social, medical, psychological and spiritual. Each discipline must contribute its leaven to an over-all science of man which will permit him to realize his potentialities. We must remember that man's dignity cannot be served in any way that might tend to depersonalize him or to deprive his existence of its real meaning.

Three-quarters of a century ago, W. T. Gairdner, Professor of Medicine in the University of Glasgow, assumed the presidency of the Royal Medico-Psychological Association. In reading his presidential address one realizes how appropriate was the choice of this eminent figure in the world of general medicine for this top office in the field of British psychiatry. The philosophy which he enunciated at that time retains its cogency for all of us:

We aim not at separating and dissecting the complex of functions which constitutes human nature into a bodily and mental part: but that each of us, in his own separate sphere, is dealing with humanity as a whole, in which body and mind are inextricably interwoven. This I believe to be the true philosophy of the healing art in all its separate departments; and whoever, even for a moment, forgets this, its essential unity, founded on the large unity of human nature to which it ministers, has already gone some steps on the fatal road that leads to unworthy views of his profession.<sup>2</sup>

In essence, the same warning might be sounded today, as we face what might possibly be one of the greatest and most startling eras known to man.

In the meantime, as we approach all of

2. Gairdner, W. T.: Presidential Address delivered at the annual meeting of the Medico-Psychological Association, Glasgow, August 2, 1882. J. Ment. Sc. 28: 321-332, 1882.

these wonderful things which are apparently in the offing, we should do so with the best working formula possible. One good one, perhaps, would be that of the elder Walpole: good sense, good manners, good humor, and good faith. In our pursuits we might even pray that we will take with us

some of those virtues about which we hear little: *magnanimitas*, *magnificentia*, perhaps even *entrapelia*, that virtue of lightheartedness, for we certainly will be able to use a great deal of it in our new adventures.

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200 Retreat Avenue  
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## Weight-Reducing

Food, not starvation, is the hard core of any weight-reducing program that will get you back to your desirable weight and keep you there permanently.

Overweight is one of the major health problems in America today, says an article in Today's Health, the magazine of the American Medical Association. About one in every five men and women over 30 in the United States is carrying about a dangerous number of excess pounds.

Reducing diets abound. So-called "health" and "natural" foods, pills, vitamin supplements and drugs for weight control are legion. There are gadgets such as vibrating machines, electric belts and mechanical exercises. The article estimates "more than \$100 million is wasted annually on these nonsensical products by the guileless fat."

Actually, no trick, miracle or special foods are needed, unless recommended by your physician. The most effective weight-reducing program is one which re-educates the individual to the amount of food needed per day and which stresses the importance of including a variety of foods in the daily diet.

Regardless of how fat you are, most experts in weight control would not recommend a diet of less than 1500 calories. On the 1500 calorie daily diet pattern, recommended by the American Dietetic Association, you will lose weight regularly, provided you take some moderate exercise every day.

*The 1500 calorie daily diet pattern—*

1 pint of whole milk

1 egg

5 ounces of lean meat, poultry, fish (broiled, boiled or roasted), or cheese. Liver once weekly.

One-half cup enriched or whole-grain cereal, 1 small potato, 4 slices enriched or whole wheat bread (or one-half cup cooked spaghetti or noodles, cooked cereal, a muffin, biscuit or 2-inch square of cornbread).

1 serving green or yellow vegetable

2 servings of other vegetables

1 serving citrus fruit or tomato (4-ounce glass grapefruit or orange juice; 8-ounce glass tomato juice)

2 servings other fruit, fresh or unsweetened

4 teaspoons butter or enriched margarine

If you don't lose weight fast enough to suit you on this diet, you could drop to 1200 calories. To do so, use skim milk or buttermilk instead of whole milk and cut out cereal, potato, or one slice of bread and one teaspoon of fat daily.

Dieting and the daily caloric needs are personal matters. To be safe and effective, any dietary plan must take into account sex, age, activity and rate of weight reduction desired. The safest and surest route to a weight-reducing dietary program is to see your doctor and follow his advice.

# The Use of Serpasil-Esidrix in the Management of Mild and Moderate Hypertension

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*The author reports that this combination of hypotensive agents gives good results and causes only minor side effects.*

ONLY A RELATIVELY FEW YEARS ago there existed no satisfactory treatment for hypertension. Today there is a wide variety of drugs available, each with different characteristics, almost all rather well-understood as to pharmacologic action and relative effectiveness.

From the wealth of clinical experience that has accumulated, two conclusions have become almost universally accepted.

1. Except in emergencies, the first drugs to use are those with relatively few unwanted side effects.
2. Rather than "push" the dose of any given drug, another should be added from a different group of compounds which, attacking the problem from a different angle, provides a synergistic action.

Because of their relative infrequency of side effects, the two drugs most often administered as first choice are rauwolfia compounds, which dampen sympathetic impulses at the level of the hypothalamus, and the thiazide diuretics which rid the body of excess sodium.

Wilkins<sup>1</sup> remarked that "Rauwolfia, or reserpine (Serpasil) is the mildest antihypertensive drug. Elderly patients tolerate it particularly well." He added that chloro-

thiazide and its derivatives are "also useful as an adjunct in patients in whom other drugs are being used with only mildly hypotensive effects. Such effects usually are markedly potentiated by chlorothiazide." He also stresses the concept of giving small doses:

"Antihypertensive drugs usually work better and with fewer side effects when used in combination than when given singly. . . . By using minimal effective doses in combination, a safe and asymptomatic regimen can usually be found that will achieve a reasonable lowering of blood pressure. Dosages and changes in dosage should be instituted gradually."

Starting a patient on one drug and then adding another has several obvious disadvantages. When a second drug is added, additional expense is incurred. Also the patient tends to become discouraged, because it is difficult to avoid the impression that he is either worse or his condition is a difficult one to treat. Therefore, if a patient could be started on a single tablet combining both drugs, without appreciably increasing side effects, these difficulties would be avoided. On the other hand, a combination tablet having a fixed ratio of components offers a theoretic disadvantage, in that this ratio cannot be varied to meet individual requirements.

The purpose of this study is to determine whether, from a practical standpoint, the advantages of such a combination tablet might outweigh the disadvantage, taking into consideration both effectiveness and side effects. Accordingly, a combination of reserpine (Serpasil) and hydrochlorothiazide (Esidrix) was given to a series of 100 hypertensive patients.

In this paper we are not attempting to discuss the cause of hypertension nor to evaluate various treatments, nor conclude that any one antihypertensive drug is the answer to all cases of this condition. We are merely giving a summary of the use of Serpasil-Esidrix in a number of ambulatory patients seen in a general practice over a period of six to twelve months. We are all looking for a drug that is safe, has few side effects, and yet controls our hypertensives.

### Materials and Method

There was a total of 100 hypertensive patients (26 males and 74 females). The blood pressure level varied from 240/140 to 140/95. Prior to therapy, the average blood pressure was 175/98. The patients ranged in age from 32 to 80 years, the average age being 58 years.

Previous medication was withdrawn two weeks prior to initiating this study. Vertes<sup>2</sup> found that hypertensive patients on hydrochlorothiazide (Esidrix) could be continued on a normal diet because they maintained an adequate excretion of salt. Thus the need for the rigid sodium-restricted diet is eliminated. No attempt was made to alter the patient's usual dietary routine. The duration of treatment with Serpasil-Esidrix ranged from four weeks to 52 weeks, with an average of 23 weeks. The combination tablet contained 0.1 mg. Serpasil and 50 mg. Esidrix. The average initial dosage was three tablets per day. The average maintenance dose was two tablets per day.

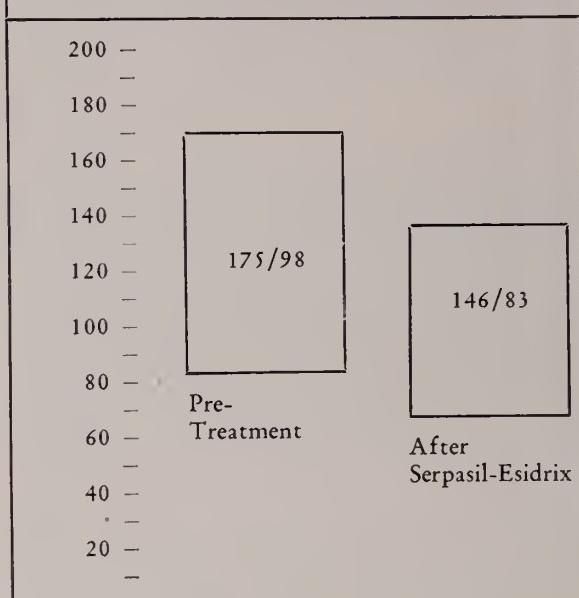
All patients had routine urinalyses, complete blood counts, and EKG's. The majority had serum nonprotein nitrogen, blood urea, blood sugar, blood cholesterol, and other ancillary examinations as were deemed advisable.

### Results

The results of the study are shown in Table I below:

As can be seen, the average blood pressure fell from 175/98 mm. Hg to 146/83 mm.

TABLE I  
BLOOD PRESSURE FALL IN 100 PATIENTS  
ON SERPASIL-ESISDRIX



Hg, an average drop of over 20 mm. Hg in mean arterial pressure. The average weight loss for each patient was seven and a half pounds. The weight loss which occurred during treatment was in no case the result of loss of appetite or inanition. Rather it was due to loss of edema or reduction of extracellular fluid in incipient edema. It was most marked in cardiac patients, as was to be expected.

In our series of 100 patients, there were nine cases of nausea, four cases of vertigo, two cases of skin rash, two cases of depression, and one case of orthostatic hypotension. The use and accompanying side effects of Rauwolfa compounds have been reviewed in leading textbooks and in many publications. A similar incidence of side effects with Esidrix has been observed by Lee, et al.<sup>3</sup> There were no clinical manifestations of hypocalcemia.

When a new therapy is given, side effects which are merely coincidental are apt to be attributed to the drug. For example, we withdrew the medication from one patient because of a rash. Later, the same rash which was morbilliform in nature and appeared on

both arms and legs, recurred while on placebo therapy. This rash subsequently proved to be due to a strawberry allergy. The drug was stopped also in nine patients due to nausea. These cases were under treatment during an epidemic of "intestinal flu". Since none of the patients treated subsequently suffered nausea while on this therapy, it now seems unlikely that there was any cause-and-effect relationship. Two of our cases complained of lassitude which we attributed to the Serpasil component. This disappeared when the dose was reduced. Thus Serpasil-Esidrix was found to have no toxicity in this group of patients. Therefore, it can be seen that the side effects were only of mild annoyance to a relatively few patients. It is a safe drug which can be given over long periods of time without the loss of its efficacy and without causing any adverse reactions.

### Discussion

With these results, we feel that Serpasil-Esidrix is an ideal drug for the treatment of mild and moderate hypertension. Naturally this regimen does not work in every case, but in our experience it has been the best drug for use in ambulatory patients. A patient who has been told that he has "high blood pressure" often becomes anxious and develops symptoms out of proportion to the degree of hypertension present; therefore, the mild sedative effect of the Serpasil is most valuable. The group of early congestive heart failures showing a slight pedal edema and positive hepatic-jugular reflex often responds to Serpasil-Esidrix, regardless of the degree of hypertension present. This too is advantageous since we can often control this condition without resorting to our more potent drugs.

One individual exhibiting the above signs had an initial blood pressure of 110/70. He developed a marked hypotension. This can be avoided by checking the blood pressure first in the sitting position and then in the standing position. Presently we are check-

ing all blood pressures in the supine, sitting, and standing positions. With the use of this method we are diagnosing many cases of potential hypotension.

Another factor which we noticed is that the action of Serpasil-Esidrix is often not dramatic, and that many individuals are slow to respond; therefore, the therapy should be continued, often increasing the dosage over a period of at least three months in recalcitrant patients. As the blood pressure falls to a normal range, the drug may often be decreased to one tablet a day or on many occasions to one-half tablet a day or one tablet every other day.

The more severe hypertensives were given relatively large doses initially, but, as a rule, the dosage was decreased when the blood pressure was brought under satisfactory control. We were impressed by the fact that almost any other type of drug could be given concomitantly with Serpasil-Esidrix. Constipation was not produced in any of the patients. We found that Serpasil-Esidrix is well-tolerated over long periods of time (because of distance, other illnesses, vacations, etc.) without fear that complications from the drug would occur.

### Summary

1. In a series of 100 hypertensive patients receiving a combination tablet of Serpasil-Esidrix (0.1 mg. Serpasil, 50 mg. Esidrix), the average blood pressure reduction was from 175/98 to 146/83 mm. Hg. The average initial dosage was three tablets per day; the average maintenance dose was two tablets per day. All patients were maintained on ordinary diets, with no sodium restriction.
2. As also noted by Currens<sup>4</sup> and Wiesel, et al.,<sup>5</sup> the combination of a Rauwolfa and a thiazide (Serpasil-Esidrix) is a satisfactory regimen for the majority of hypertensive patients.
3. Serpasil-Esidrix is a safe medical regimen in most patients, with minimal side effects. This drug can be given over long

- periods of time without loss of efficacy and without adverse reactions.
4. There were no clinical manifestations of hypocalcemia in this series of hypertensive patients.

Serpasil-Esidrix supplied by the Medical Service Division, CIBA Pharmaceutical Products Inc., Summit, New Jersey.

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## Radioactive Fallout

There are two things to think about in this business of fallout and its effect on humans—

- The scientists are by no means in agreement as to how much radioactivity we can absorb without bothering us.
- There isn't very much that us average folks can do about it anyway.

In spite of all the bombs set off in the last few months, the chances are that there still isn't enough radioactive fallout in the United States to constitute a health problem. This no one knows for sure, but a majority of the men who know most about the problem have said many times that they don't think we need to start worrying yet.

Whether you are in favor of fallout shelters or not, we can't just retreat to a shelter this winter. The man of the house has to go to work, the lady has to go shopping and the kids have to go to school. We have to be out in all kinds of weather everyday. If there is radioactive fallout in the air, we'll get some of it, and there's nothing we can do about it.

The American Medical Association recently conducted a survey of seven of the

top experts in the nation. All seven agreed that fallout was not a health hazard. Since that time, more bombs have been exploded, but the principle remains the same. The best opinion of a majority of the experts is that we can absorb all of the fallout now floating around without damage.

Radiation in all its forms will play an increasing role in the lives of all mankind. The uses of nuclear fission will continue to expand and potential radiation hazards will increase accordingly. The need for conservative management of all radiation sources is obvious.

There are still many unknowns, and research on a wide front is going rapidly ahead. As new information is gained, man can expect to derive increasing benefits from the release of nuclear energy with a minimum hazard to himself and his descendants.

All of us are living in a world in which nuclear energy will be used more and more in the years to come. Learning to live with radiation all around us is something we cannot escape. Meanwhile we can keep from becoming panicky over something we cannot control, something whose harm to mankind is still largely an unknown factor.

# The Significance of the Plague Fly

## An Historical Note

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*The Plague Fly, unknown today,  
caught the imagination of physi-  
cians of the last century.*

DURING THE MID-NINETEENTH CENTURY a number of observers were variously impressed, bemused, or astounded by the prevalence and significance of the vast swarms of "plague flies" which appeared coincidentally with many epidemics, especially in the South. A contemporary gave this description of the insect concerned: a fly of a dull ochery-yellow color, over a quarter of an inch long, with a quarter-inch wing-spread. In the female the abdomen was usually so distended with yellowish eggs that members of that sex seemed a brighter yellow. Notes on the prominence of the eyes and the placement of various hairs and spines essentially completed the sketchy description. This observer, S. S. Rathvon by name, decided to dub it *Musca ochrapesns*.<sup>1</sup>

Apparently, today, the fly is rare. The popular name of "plague fly" has died out. It was unfamiliar to several entomologists, interrogated. However, Mr. J. F. Gates Clarke, Curator of Insects at the Smithsonian, directed my attention to a note by Mr. Curtis W. Sabrosky who had recently analyzed the above description.<sup>2</sup> The latter feels that the plague fly fits the description of the currently-named *Chyromya flava*, and that it was misdiagnosed as a *Musca* by Rathvon. Standard reference works on entomology either ignore the fly altogether

or just mention the family name *Chyromyiidae*, and do not bother with the genera and species. One such work states that this is a family of small, rather uncommon flies which occur in the southern states along the seacoast, and that very little is known of their habits.<sup>3</sup>

The most enthusiastic observer of the fly was, however, not a Southerner. He was a Pennsylvanian, Dr. J. Franklin Reigert by name. In fact, so carried away by his observations was he that he developed a whole theory of disease and hastened to publish in a rare little tract in the autumn of 1855 when he felt that terrible events in Norfolk, Virginia, were confirming his opinions.<sup>4</sup> His is one of the clearest examples of *post hoc ergo propter hoc* reasoning. There was an entire lack of the experimental approach. It seems more typical of Renaissance reasoning than that of the century of Pasteur.

It all started with his observation in the summer of 1852 that a cholera epidemic had been preceded, to the extent of one day only, by a vast cloud of plague flies. He had found a number of them dead in the wooden spout of his hydrant, killed surely by the lime content of the water—thus, ingestion of lime water became a part of his treatment of cholera patients. Dense clouds of the insects were in the vicinity. The same coincidence occurred in 1854 and again in 1855. Dr. Reigert brooded over the significance of his observations. It did not take his imagination long to discover that there was always a peculiar yellow haze in the atmosphere just before a cholera outbreak. Soon this yellow haze, in his mind, somehow became associated with the clouds of yellow plague flies. Yellow haze plus

sun-obscuring masses of yellow insects and in a day or so cholera! To our nineteenth century physician the answer was simple. That yellow haze was part and parcel with the miasma of the disease. That magic word "miasma" made the obscure clear, the rough places of medical knowledge plain. Reigert felt that either the haze consisted of broken up flies or the flies were condensed haze. And when people inhaled the flies, or parts of them, or the air poisoned by the clouds of flies, the deadly poison caused cholera if the "systems are disordered by disease or improper diet".

These conclusions became fixed in his mind in 1855. Between episodes of prescribing lime water for epidemic cholera he planned his paper on his new theory. Imagine his delight to learn more about the plague fly from his southern correspondents: the dipterous insect had an association with yellow fever also! A letter from Norfolk gave him the details of the sudden arrival of vast numbers of the plague fly, usually quite a stranger in that latitude, at the height of the terrible yellow fever epidemic. The numbers were so colossal that when the flies settled on the coffin of a yellow fever victim their bodies were so densely placed as to exclude the coffin from sight in a yellow mass.

Other observers and writers were likewise puzzled and amazed by this vast influx of yellow insects during the Norfolk epidemic. Forrest<sup>5</sup> devoted only a paragraph to them. He stated that they had never before been observed in that locality. He refused to theorize about the significance of the appearance of the flies in such vast numbers especially on fig trees and in damp and filthy places.

Armstrong<sup>6</sup> was much more interested. In fact, he may well have been Reigert's correspondent since he stated that a physician in a distant city had requested specimens. The plague fly, according to Armstrong, had received its name from the belief that its appearance marked the crisis of epidemic yellow fever. This was so common

an occurrence in the southern cities during their frequent epidemics that many—especially Negroes—thought that they ate up the "morbific matter which is the immediate cause of the disease". Sure enough, this same thing happened in Norfolk: the great influx of the flies began on the last day of August, 1855, and the numbers reached a peak quickly and the insects nearly disappeared by September 13. This coincided with the height of the human epidemic. Apparently the flies only lived about a day. Their bodies, soft and repulsive, disintegrated after death amazingly quickly into mere brown spots. Specimens in a vial became just dust.

Armstrong was willing to theorize a little, though he did not let his imagination run as did Reigert. He doubted that an "animalcule" could suddenly turn into an insect, whether an animalcule floating in the air caused yellow fever or not. His true opinion was that the plague fly, because of its slimy nature, was a degenerated and diseased common fly. He did not say so, but he strongly hinted at the notion that the yellow fever infected and changed the common fly. This would have accounted for the fact that the appearance of the flies marked the crisis of an epidemic so frequently.

It would seem more likely to us today that the relatively sudden breakdown of the none-too-good-at-best sewage and garbage disposal during a terrible epidemic, when folk were preoccupied with more acute distresses, afforded a suddenly greater breeding and feeding ground for the insect. Perhaps our improved conditions account for the present-day rarity of the fly, if, indeed, it is not just one of those forms of animal life that have become extinct for no good reason.

Theorize as we may about the differences in prevalence of the *Chyromya flava* then and now, the fact remains that these observers were greatly impressed. Evidently Dr. Reigert was the only one who went so far as to fashion a neat theory of disease about these insects. To us he would seem to have been on more reasonable ground if

he had postulated the insects as intermediate hosts rather than as the active agents of epidemics of cholera and yellow fever when aspirated in whole or in part. It is very easy for us, in our superior way, to smile at his effort as a monument to clear observation and fuzzy thinking. But have a care! Dr. Carlos Finlay had a notion about a relationship between *Aedes* mosquitoes and yellow fever many years before Walter Reed proved it.

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### Flashlight Used to Find Brain Defects

An ordinary flashlight is being used routinely to find brain defects in infants examined at Massachusetts General Hospital, Boston, according to Drs. Philip R. Dodge and Philip Porter.

The flashlight which illuminates the cranial cavity has aided the diagnosis of a variety of cerebral abnormalities, the two physicians wrote in the December Archives of Neurology, published by the American Medical Association. They urged wider application of the method, termed transillumination and employed as early as 1831 by Richard Bright with sunlight and candle.

In the newborn or very young infant, transillumination may be the only definite way to find whether anything is amiss. In

addition, the technique can be useful in following the course of a brain condition.

The authors used a two-battery flashlight with the glass lens removed and a soft rubber cup attached for contact with the baby's head. The examinations were done in a dark room, and color photographs of the illuminated brain were taken with flashbulbs.

The technique was generally successful in all infants up to one year old although the color and thickness of hair and complexion of skin influenced the results.

This simple technique "has a much wider application to neurologic diagnosis than is generally realized," but it "must be employed routinely before its usefulness can be fully appreciated."

# The Use and Abuse of Estrogen for Hemorrhage

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***Spontaneous Hemorrhage should be distinguished from traumatic or surgical bleeding. The author advances the theory that these hemorrhages are hormonal in origin and that treatment with estrogens will prevent or stop this type bleeding.***

HEMORRHAGE of obscure origin and from uncertain sources is a difficult and perplexing problem and one with which every branch of medicine must contend. According to my definition, this kind of bleeding has a higher morbidity and mortality than any other human affliction. Any form of therapy besides surgical intervention is eagerly seized upon because it is now recognized that operations, regardless of their purpose, only turn aside the immediate threat but do not cure this disease.

The purpose of this study has not been to promote any substance for the control of bleeding. My original intention and the one to which I still adhere was to establish spontaneous hemorrhage as a clinical entity in itself and as an extremely common disease which has infinite manifestations depending upon where it strikes. It is singular that such bleeding, which can happen almost anywhere, is not included in hematology among the hemorrhagic disorders. Estrogen therapy contributed to the development of the conception that the organism has the ability to create a site for bleeding, then to promote a hemorrhage and eventually to

dissipate this whole process with scarcely a trace of its existence. I have never claimed that estrogen promotes coagulation nor suggested that it should be used as a hemostatic agent for surgical or traumatic bleeding.<sup>1-8</sup> The prophylactic use of estrogen has been an important but secondary project.

## Some Reflections on Bleeding

In all the forms of Spontaneous Hemorrhage I have described, one fact stands out: there is no abnormality of the blood since none of the hemorrhagic factors, as far as these are known now, are present. Moreover, these so-called bleeding factors may not be the components which predispose to hemorrhage for, as one editor recently pointed out: "Current physiological knowledge does not suffice to explain the difference between bleeders and non-bleeders. . . . The mechanisms normally responsible for the clotting of blood present a tangle of problems that have gone unsolved too long. Every cerebrovascular accident and every postoperative thrombosis or hemorrhage is a reminder for conclusive work in this field."<sup>9</sup> And the International Committee on Nomenclature and Blood Clotting Factors said: "The field of blood coagulation is one in which medical men and biological scientists have created such chaos that they do not understand what other workers are talking about, far less the clinician and the medical student."<sup>10</sup>

The deficiencies in our knowledge of hemostasis are emphasized by Thomas and his group.<sup>11</sup> The conclusion of their careful study of the hemorrhagic diathesis in leukemia and allied diseases is equally applicable to spontaneous hemorrhage generally. They say: "Of 58 patients with leukemia and allied disorders, 36 demonstrated hemor-

rhage. The correlation between a coagulation deficit and hemorrhage was disappointing. Not only does the cause of bleeding in many patients remain obscure but also there is no hemorrhage in others where it might be expected." These statements are reminders of the age-old concept of the clot acting as a mechanical seal and that coagulation is the principal means for halting the hemorrhage. It is my opinion that nothing could be further from the truth, for coagulation and hemostasis are not synonymous.

What starts the bleeding in the first place is never mentioned. Capillary fragility plays only a minor role. While it may reduce the ability of the capillaries to contain the blood under its normal pressure, bleeding is an active process probably under the control of hormonal and neurogenic impulses which prevent vessels from partaking fully in the whole orderly progression of events necessary for hemostasis. Coagulation is completed only during the final phase and retraction, constriction and adhesion of the vessel walls must precede the formation of the clot. Only under the exceptional circumstances of some of what are accepted as true hemorrhagic disorders, and these are comparatively rare, does the failure of coagulation influence the control of bleeding. The human organism already possesses in the menstrual cycle a mechanism that will start bleeding by itself and stop this bleeding without coagulation. This mechanism is entirely under endocrine control.

That clotting is only one aspect of hemostasis can be seen easily during the making of surgical incisions. Comparison of the bleeding from similar incisions shows wide discrepancies that cannot be attributed either to variations in constitution or the distribution of vessels. In some only a few large vessels need to be ligated while others must be lined with clamps before proceeding with the next step of the operation. Furthermore, oozing often varies even during the operation.

Nor are there any tests or measurements,

such as bleeding and clotting times, that are clinically useful. Any test, even when it indicates a bleeding tendency, is remarkably deficient for accurately forecasting whether bleeding will or will not occur. And, of course, tests are utterly useless for predicting the delayed hemorrhages that so frequently follow tonsillectomy, prostatectomy and injuries to the eye. Spontaneous hemorrhage, from the standpoint of either etiology or treatment, cannot be considered to be surgical bleeding. But in abnormal or peculiar surgical bleeding as well as spontaneous hemorrhage, an active bleeding mechanism of some kind must be in operation for why should vessels open or persist in staying open of their own accord, then bleed and as happens in so many instances stop bleeding without any kind of assistance. This mechanism must interfere with retraction, constriction and cohesion of vessel surfaces to prolong the bleeding.

Spontaneous hemorrhage must occur from a lesion, even though the lesion cannot always be demonstrated and sometimes seems to be only a surface as in the stomach and uterus. These lesions may be aneurysms and angiomas such as those found in the brain, ulcers, erosions, telangiectasias, varicosities and similar vessel abnormalities. According to my theory the source of bleeding must be clearly distinguished from the cause. These lesions, just like the endometrium in functional uterine bleeding, are the source but not the cause of bleeding.

One of the most common forms of spontaneous hemorrhage is bleeding from the stomach. Hardaway<sup>12</sup> disputes the popular notion that such bleeding is always secondary to peptic or duodenal ulcer and states that gastritis ranks second (and possibly first) as the cause of upper gastro-intestinal hemorrhage. He also acknowledges that it is possible for bleeding gastritis to either subside or progress independent of whether surgery is performed, and that surgery does not solve the bleeding problem—a position I have maintained for years. He agrees with Palmer<sup>13</sup> that if empiric gastrectomy is go-

ing to be done, then all and not just part of the stomach must be removed. This measure strikes me as rather heroic for a condition that might be self limited.

The mechanism of the erosive process in the stomach described by Palmer is similar to that of the shedding of the endometrium —another reason why I have previously called attention to the probability that spontaneous hemorrhage is analogous to the bleeding phase of the menstrual cycle. He says:

The apparent mechanism of the erosive process (in the stomach) does not seem very complicated. Briefly the mucosal layer dehisces from the stratum of the necks of the tubules, with exfoliation of the foveolar stratum from the underlying glandular portion, to form the erosion. Surface influences are not at work and no histopathologic abnormalities develop in the surface epithelium or foveolar structures; rather the injurious influence is believed to be blood born to the neck stratum in some cases and to result from the hypoxia of local capillary engorgement in others.

The dissimilarities between the erosion of the gastric mucosa and the shedding of the endometrium are due to differences in structure and function. Both are blood born. In fact I have had one patient, 28 years of age, who had had a total hysterectomy for functional uterine bleeding at the age of 25, and bled from the stomach every month along with the other symptoms of a menstrual period. This wretched situation could be relieved only by total gastrectomy thus creating a gastric cripple and with the likelihood that another focus for bleeding would be established.

For convenience, spontaneous bleeding may be divided into two main categories; bleeding into open spaces and bleeding into closed spaces. The latter include cerebral and intra-ocular hemorrhage, bleeding into the walls of arteries creating dissecting aneurysms and obstructing vessels either by fibrosis and thrombosis or by the formation of atheromatous plaques, hemorrhage into the spleen and pancreas, retroperitoneal

hematomas and others. In these forms of hemorrhage, the damage is done almost immediately and treatment must be directed at the complications.

Bleeding into open spaces is quite another matter since the presence of blood itself is not of immediate concern unless it cannot escape. Thus blood flowing from the kidney may be in such quantity that it may not be able to pass down the ureter with sufficient speed, blood from the bronchi may fill the alveoli or enough blood in the gastro-intestinal tract may bring on shock. Bleeding from the nose is the most frequent and innocuous form since it cannot accumulate anywhere although the formation of clots, which incidentally do not stop the bleeding, may become uncomfortable.

Hemorrhage is a prominent feature of such an astonishing array of common diseases that it must have an origin of its own. Severe and even exsanguinating hemorrhage can occur during the course of at least 35 conditions that are as disparate as coronary thrombosis and pemphigus and as diverse as the bleeding from tumors, ulcers, polyps, diverticuli and varicosities, as well as in infections such as tuberculosis and rheumatic fever. Hemorrhage can occur in two or more places simultaneously such as the gastro-intestinal bleeding associated with the intimal hemorrhages of coronary thrombosis. To believe that bleeding peptic ulcer just "happens" with coronary thrombosis is a failure to face the facts for it occurs too often to be coincidence.

Furthermore, the bleeding tendency cannot be ascribed to the specific lesions of a disease. For example, that cirrhotics bleed from esophageal varices and that it is due to portal hypertension have become popular convictions that are almost sacrosanct. Yet the facts are first, not all cirrhotics have varices; and second, among those who do, bleeding occurs more often from other lesions than from the varices. The reason for this bleeding tendency in asthenic and debilitating diseases has not been found and a specific bleeding factor has not been dis-

covered although one certainly must exist. No patient, regardless of the disease, bleeds all the time and in fact, practically all spontaneous bleeding is episodic in character. What starts and what can stop the episodes are therefore urgent problems.

Nor do the effects of bleeding always immediately follow the hemorrhage. Blood in even minute quantities suddenly released into the walls of an artery, as in the coronary circulation and in the brain, may create spasm severe enough to occlude their lumens. In young men this spasm often is the cause of shock and death when it occurs in the coronaries and transient hemiplegia of varying degree when it happens in the brain. But more often the results of intimal bleeding are delayed for an indeterminate number of days, finally ending in the development of atheromata, berry aneurysms or thrombosis. During this interval, there is no evidence whatever that a hemorrhage has occurred since it remains silent until a catastrophe is precipitated. Hence these hemorrhages are as subtle and malign as cancer and have a higher morbidity and mortality; and the interval between the intimal hemorrhage and the end of the arterial reaction to it accounts for the fact that the latter can occur at any time and is independent of such factors as sleep, exertion and emotional stress.

### The Fallacy of Controlled and Double-Blind Studies

It would appear to be simple to evaluate the virtues of estrogen for the control of bleeding during operations or for the arrest of hemorrhage of the spontaneous bleeder. All that should be required is the comparison of two series of similar cases of either operative or spontaneous bleeding. Unfortunately, patients bleed one by one or are operated on one at a time and as far as bleeding is concerned they differ as much in their anatomy and physiology as they do in their faces. No two are alike and no more can be said of their bleeding characteristics

than that they have two eyes, two ears, a nose and a mouth and so on.

The details of no other disease have been catalogued so carefully and completely as those of appendicitis. Yet this mountain of data is not a useful guide for deciding which patient should be operated on or who can be safely let alone. Positive tests, especially blood counts, are useful but are not conclusive and negative tests do not rule out this disease. It is well known that half the attacks will subside of their own accord but there is no way of determining which patient will fall in that half. Consequently, once the diagnosis is made or sometimes even suspected, clinical experience becomes the final arbiter and the appendix always is removed. Similarly, with bleeding, there is as yet much less reliable data and no tests. Within reasonable clinical limits and without being overly zealous, most patients should be given such therapy as is now available with the hope that it will benefit those few who do have the tendency to bleed.

It is my opinion now that those without a tendency to bleed will not benefit at all. Assuming that out of 100 patients to be subjected to tonsillectomy only 25 have the hemorrhagic factor, then there is the possibility of selecting for prophylactic therapy only the few of these who have a positive history. Consequently, if the whole 100 are given this therapy, then the reduction in bleeding will occur only in these 25. Compared to another group of 100, the differences will appear only from the 25 in each group. The results can easily be offset by the anatomical differences between the two groups of normals, the unexpected appearance of an anomalous vessel, the slipping of a ligature or an anaesthetic difficulty unless the series is so huge as to make these complications insignificant. Such a large series would hardly be within the compass of one surgeon or group of operators. Until tests for bleeding that are universal so that they can be applied to each individual such as those for blood sugar, Nacl, CO<sub>2</sub>, BUN, etc., have been invented, any study of the effects of

an anti-hemorrhagic agent on large groups which include bleeders and non-bleeders is liable to too many distortions and errors of interpretation to be useful.

In this day and age, it seems that data, tests and measurements are the criteria for success. While their value cannot be denied, neither can the importance of clinical observation. It is axiomatic that blood loss should be kept at a minimum, but concern for bleeding must be relative to the ability of the patient to withstand hemorrhage. The skill and speed of the operator and the quality and characteristics of the tissues also must be considered. None of these can be measured. The aggregate results of individual cases cannot equal the expert operator endowed with surgical discrimination and the insight for judging when he is losing too much blood or when he is losing less than he ordinarily would. The art of medicine may be supplemented but cannot be supplanted by statistics.

Quantitative blood loss measurements at the operating table bear about the same relation to the whole procedure as medical illustrations resemble the actual anatomy. Bleeding is now considered only in the context of the clotting of vessels and seldom from the standpoint of a hemorrhagic factor or some such mechanism interfering with the normal process of hemostasis; and the measures and devices for controlling spontaneous bleeding largely supersedes the perplexing problem of what started the bleeding and keeps it going after every means at our disposal for controlling it fails.

Controls applied to a series of patients who are already bleeding obviously are unsound. First, a large number would stop bleeding without any treatment but who they will be cannot be determined in advance. Second, once a patient is bleeding, it is almost negligence to allow him to continue if it can be stopped. Any device or means for arresting it is justified. Shubin and his group<sup>14</sup> and Popper,<sup>15</sup> working in sanatoriums, used this principle to test the action of intravenous estrogen on the par-

ticularly resistant hemorrhages of pulmonary tuberculosis. This kind of bleeding has been thought to be due to the invasion of a vessel by a cavity and the treatment now is palliative and supportive therapy. Surgical therapy with measures analogous to those used in gastro-intestinal bleeding, such as suddenly compressing the lung or exploring the thorax with the idea of excising, ligating or even finding the bleeding point, is far too dangerous to be attempted. Estrogen therapy succeeded in stopping 50 out of 52 hemorrhages within an hour and only a few patients needed more than one dose. Their results indicate that pulmonary hemorrhage in tuberculosis is a form of spontaneous hemorrhage. Even if the number of successful cases were smaller, the treatment would be still worthwhile for it is impossible to tell when it will be effective.

### The Action of Estrogen

Despite the recognition of a bleeding factor of some kind I have maintained that the action of estrogen is upon the vessels and capillaries. Recently new information on this action has come to light. Schiff<sup>16</sup> showed by means of a rare tumor, juvenile angio-fibroma, that estrogen affects the ground substance, including that of the vessels. This tumor, which occurs only in the pharynx of males, is approached with unusual caution because it bleeds so profusely. By means of intensive estrogen therapy and with biopsy, both before and after the therapy, Schiff demonstrated that the thin areolar-like quality of the supporting connective tissue of this tumor is readily converted into a much more dense and mature connective tissue that facilitates its removal without excessive bleeding. In fact the structure of the whole tumor was changed so that it became much smaller and firmer. Thus the action of estrogen could be observed both grossly and microscopically. Schiff and Burn<sup>17</sup> then proved experimentally that the action of estrogen was upon the ground substance, increasing the amount of acid mucopolysaccharides and lengthen-

ing their polymers, especially around the smaller vessels. They concluded that this increase of the mucopolysaccharides in and around the capillary walls together with a shift of the sol-gel state are probably responsible for the effect of intravenous estrogen upon the ground substance. Their work substantiates the empiricism and clinical experience upon which my theory and treatment of spontaneous hemorrhage have been based.

Burnam<sup>18</sup> points out the importance of chemical degeneration of the acid mucopolysaccharides in the development of dissecting aneurysms. When this ground substance becomes abnormally abundant or unusually thin, either microscopic separation of the elements of the media occurs or there can be a spontaneous longitudinal cleavage of all or part of a vessel wall without any hemorrhage at all. The dissecting is not done by hemorrhage but by antecedent changes in the chemical structure of the tunica media. Thus another almost universal belief, that hemorrhage into the walls of arteries is the primary cause of dissecting aneurysms, is found to be false. The changes in the media are chemical and not necrotic, hence the term "medial necrosis" is misleading.

The likelihood that estrogen may have different actions when a hemorrhage is in progress and when it is not cannot be overlooked. Clinical experience indicates that when a patient is bleeding, the effect of estrogen does not become manifest until 30 to 45 minutes have elapsed. It would be improbable but not impossible for the hormone to change the ground substance in that time. Estrogen may either neutralize the vascular toxin I have postulated or else have a direct action upon the vessels by stimulating their contractions. When a patient is not bleeding, it would seem that for estrogen to convert the sol-gel condition of the ground substance in the vessels into a more solid state much more time must be required. Failure to integrate the time element and the circumstances under which

the bleeding is taking place can nullify the data of either controlled or double blind studies.

At the risk of becoming repetitious I want to emphasize that the purpose of therapy is to convert the bleeding state into the non-bleeding state by controlling whatever agent or agents started the bleeding in the first place. Regardless of the means by which estrogen or any other compound succeeds in this purpose, its action should not be construed entirely as that of a hemostatic alone. Spontaneous hemorrhage is herein considered to be a clinical disease which is hormonal in origin and hormonal therapy is intended to remedy the fundamental pathophysiologic process which precipitates the hemorrhage. This process is still an enigma, but it should be obvious that the characteristics of this kind of bleeding cannot be the same as those of surgical or traumatic bleeding. Therefore the treatment of one cannot be adequate for the other.

### **The Abuse of Estrogen Therapy**

While estrogen may stimulate certain blood factors and depress others, these changes are insufficient to account for its hemostatic faculty. Furthermore, accordingly to Quick,<sup>19</sup> too much attention is now being paid to so-called accelerators and inhibitors and too little to the hemostatic mechanisms inherent in the vessels themselves. To give estrogen when there is no abnormality of the vascular bed is a waste of therapy.

Nor can estrogen be employed to control the bleeding that is so characteristic of some operations, especially plastic procedures on the vagina. It surely is not a substitute for skill and, in this and other types of operations in which capillary oozing is a major problem, the time consumed by the procedure is tremendously important. This aspect of their operations is not mentioned by Carrow and Jacobs<sup>20</sup> in their series of 39 patients who underwent vaginal hysterectomy and its subsequent plastic procedures by 11 different surgeons. They concluded

that the administration of estrogen made no difference in the blood loss and that it was useless as a hemostatic agent. At best it could have been of value in the older age group and only 19 of their patients were over 45. At or above that age, subclinical bleeding states may be presumed to exist, even without a suggestive history. Since this kind of bleeding is surgical, the elements that precipitate a spontaneous hemorrhage are missing and there is little to be gained from the standpoint of bleeding in the majority of cases.

The stimulating effect of estrogen therapy on the vaginal mucous membrane is a better indication for its preoperative administration in vaginal plastic procedures. But it must be given far enough in advance of the operation to have the opportunity to accomplish its purpose and that certainly is not at the beginning. It is my impression that when estrogen is started at least a week before operation, not only are the tissues improved but oozing is reduced. Of course, bleeding from any of the larger vessels encountered will not be altered.

Almost the same objections can be raised against the report by Cooner and Burros<sup>21</sup> of a double blind study in which they found no difference in the amount of blood lost and in the bleeding characteristics of 50 patients subjected to prostatectomy. Their experience with bleeding is not in accord with that of other urologists since in their control group of 25 patients, four required insertion of the resectoscope for the evacuation of clots at various times up to the 21st and 24th days after surgery. Such a large number of immediate and delayed hemorrhages encountered both in their control and estrogen groups suggests that other factors may have influenced bleeding. Bobelis,<sup>22</sup> in his controlled study in which the estrogen was given 18 hours before operation did not have this difficulty. He still did not start the administration of estrogen far enough in advance nor give it in adequate quantity.

Failure to pursue estrogen therapy is an-

other abuse. The goal is not only the arrest of bleeding but the resolution of the bleeding state. Some give just one dose and if it fails, or if bleeding stops and then returns, it is condemned as useless and abandoned as if substitutes were available and other measures always effective. The problem of bleeding is too complex to be resolved by a simple solution. Epistaxis, the most common and most accessible form of all spontaneous hemorrhages, does not always respond to the accepted measures for controlling bleeding because the systemic factors are ignored. The objective of estrogen therapy is to duplicate the self-arresting mechanism which stops the majority of these hemorrhages.

Estrogen therapy is of no value in traumatic bleeding, yet it has been used with the expectation that the bleeding will stop. It would be an improbable coincidence if, for example, a nose injury would happen at the same time as the patient was about to bleed from his nose. In that rare case, estrogen would be useful. It is significant that the injured nose seldom bleeds as much as the one that is bleeding spontaneously and is additional evidence that traumatic or surgical bleeding is entirely different from spontaneous bleeding. The indiscriminate use of this therapy upon every bleeding occasion is to be condemned.

### **The Use of Estrogen Therapy**

Except when larger arteries are bleeding, there is no question that hormonal therapy sometimes can have a startling and dramatic effect upon a hemorrhage and succeed when all other measures have failed. To obtain the maximum benefit when confronted by a patient who is bleeding spontaneously, there must be some understanding of the bleeding state. Briefly, the bleeding state, which I have described elsewhere, is a systemic upheaval and not the reaction to the hemorrhage alone. The bleeding site and the hemorrhage are only local manifestations of the disease. Symptoms and signs of the bleeding state are difficult to describe accurately. The clinician will become more

conscious of them with experience and if he seeks to separate the alarm and panic that usually accompany bleeding situations from the signs that are pertinent to the bleeding state alone. It is characterized by a rapid and bounding pulse that resembles the pulse in fevers, and the patient is restless and irritable regardless of whether the hemorrhage is active at the time of observation. These points are illustrated by the following cases:

*Case 1.* A.L.K., male, age 53, consulted me for epistaxis of eight days duration. He had had no bleeding since childhood. The first night he was given 20 mg. of estrogen intravenously at the emergency room of the hospital and was sent home after the bleeding stopped. It recurred during the night and the next three nights. On the third night he again was given 20 mg. of estrogen and the nose was packed. During that night also he bled through the packs and they were removed. There was little or no bleeding in the daytime. A few days later the nose again was packed and that night he also bled through the packs. At 2 o'clock of the afternoon of the next day when I first saw him, the pulse was rapid, full and bounding, he was extremely restless and the hemoglobin was only 8 gms. per 100 cc. of blood. My impression was that he was still in the bleeding state and gave him 20 mg. of estrogen intravenously although he was not bleeding. A few hours later this dose was repeated because the pulse and other signs had not changed. He also was given two tablets containing 2.5 mg. each of estrogen and a sedative with instruction to take them all in another two hours. Although he and his family were still apprehensive at the prospect of continued bleeding, it did not recur. The next afternoon the pulse was much slower and, as the patient was quieter, I considered the bleeding state to have been resolved and that no more therapy was needed. Transfusions were not given and he quickly made up the loss of blood. The skeptical may consider the cessation of bleeding

to be coincidental or could have even been due to the sedative. Still there are no answers as to why the bleeding should start again after it had stopped and presumably after the vessel had been sealed by a clot or the packs, or why bleeding should happen at night and subside during the day. A nasal branch of the palantine artery must have been bleeding as the septum was clear and blood was dripping into the pharynx.

Three months later he presented one of the rare occasions for observing the bleeding point and the action of estrogen. He had awakened to find himself bleeding from the middle of the lower lip without any injury. The bleeding point from which the blood was pulsating was a small opening about 1 mm. in diameter surrounded by a congested area. This aperture could be occluded by merely holding it between the fingers but bleeding would start again when the pressure was released. Upon the administration of two doses of intravenous estrogen the bleeding stopped and the congestion disappeared although the aperture remained open. The area healed without incident and bleeding will not recur until he again develops the bleeding state. Where it will happen cannot be predicted.

*Case 2.* This case demonstrates that intravenous estrogen therapy can be a valuable clinical tool when confronted by a gastrointestinal hemorrhage of obscure origin, E.L.G., male, age 20, was brought to the emergency room of the hospital with hematemesis and in shock. The previous history of bleeding consisted of infrequent attacks of epistaxis. After 20 mg. of estrogen was given intravenously, the shock nearly disappeared and the bleeding stopped. The hemoglobin was only 6.2 gms. per 100 cc. of blood and 1000 cc. in which was mixed another 20 mg. of estrogen was given as soon as preparations for transfusion could be completed. Although the pulse became much slower, its characteristics did not change and even though the hemorrhage apparently was arrested, he was still con-

sidered to be in the bleeding state. Two more doses of estrogen were given on the third day and another on the fourth when there was a moderate amount of epistaxis. Transfusions were withheld all that time. During the latter part of the fourth day the pulse lost some of its bounding characteristics and became less rapid. It was thought then that transfusions would not renew the bleeding and accordingly 1000 cc. of blood was given as soon as the decline of the pulse rate was noticed. The chart (Fig. 1) shows this abrupt decline which I

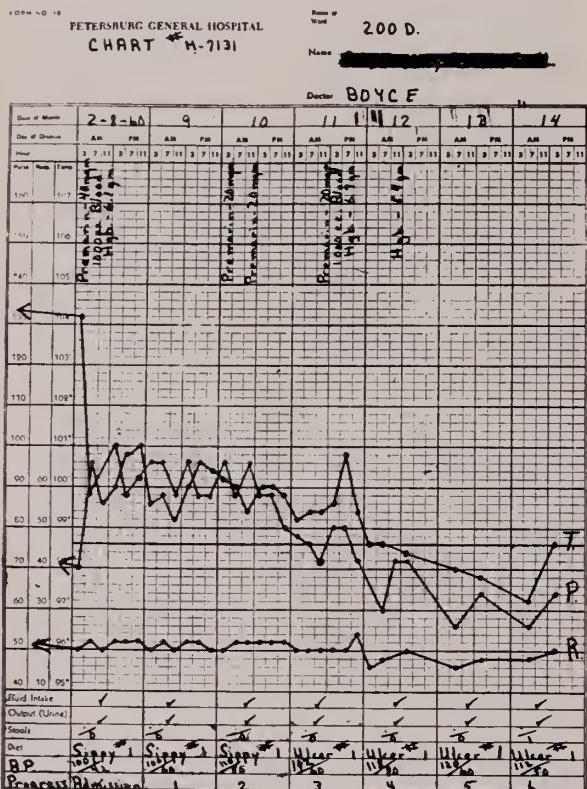


Fig. 1. This 20 year old male was brought to the hospital with severe hematemesis and in shock. Twenty mg. of I.V. Premarin were given in the emergency room and another 20 mg. in the transfused blood after admission to the hospital. Note the sharp drop in the pulse rate which coincided with the arrest of bleeding and the disappearance of the shock. The pulse continued elevated although he was not bleeding and two additional doses were given on the second day. The pulse did not decline until another dose had been given on the third day. Then transfusions were considered safe but his general condition was such that they were not really necessary. One must not overlook the possibility that transfused blood may contain appreciable amounts of estrogen and perhaps other substances that can help control bleeding. This good fortune cannot be relied upon and accurate information regarding it is lacking but it may be the reason why a transfusion will sometimes stop a hemorrhage. However, the hazards of massive transfusions far surpass their advantages.

believe indicates the ending of the bleeding state. Studies failed to disclose a bleeding lesion and he was discharged from the hospital with the diagnosis of hemorrhagic gastritis.

*Case 3.* This case suggests the erection of a straw man for the purpose of knocking him down. A 19-year old boy complained of pain in his left groin after heavy lifting and a small tender inguinal hernia was found. The parents were alarmed when I suggested operation and informed me that their son was a "bleeder". Their statement was verified by his history which fulfilled the criteria of Diamond and Porter<sup>23</sup> for discovering potential bleeders. Tonsillectomy, at the age of 11, was followed by delayed hemorrhage so severe that transfusions were required and there was some question as to whether he would survive. Some years later after extraction of a tooth, he bled for a week. Minor lacerations also bled freely and subcutaneous hemorrhages appeared after light blows. In addition he had another finding which may be helpful in detecting the potential bleeder—the hemoglobin and hematocrit were higher than normal. I have discarded bleeding and clotting times, the study of the hemorrhagic factors and the counting of platelets as being without value in this disease.

Twenty-four hours before operation he was given 20 mg. of estrogen and another dose was administered with the intravenous fluid at the end of operation. In the incision it was necessary to ligate only the large vessels and oozing was negligible. The convalescence proceeded uneventfully until the third day when the pulse began to rise (Fig. 2). This increase in rate may have been temporary and I decided to wait another day to see if it persisted with the thought that if it did, then a delayed hemorrhage was impending. As the pulse rate did not diminish and he was becoming restless, 20 mg. of estrogen was given and the pulse rate declined appreciably. The decline continued on the fifth day when I considered the bleed-

ing state had been dissipated and he could be discharged from the hospital.

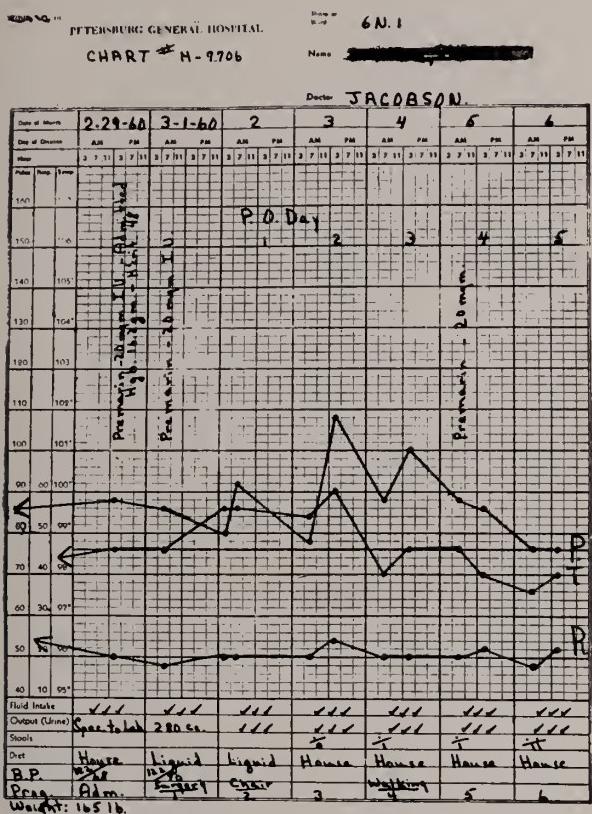


Fig. 2. This chart does not seem unusual for an ordinary case of herniorrhaphy. However, the patient presented the common problem of a recognized bleeder without any reason for this defect. I.V. Premarin was given on admission and in the intravenous fluid during operation. Note the elevation of the pulse rate on the second postoperative day without a concomitant rise in temperature, which may indicate a developing delayed hemorrhage, and the decline after I.V. Premarin was given. The restlessness and irritability which I believe are analogous to the symptoms of premenstrual tension also disappeared.

In these three cases nothing can be "proved". Perhaps the first two patients would have stopped bleeding without any treatment and the third patient may not have bled at all. But similar results have been obtained too often to regard them as purely coincidental. The ability to detect the bleeding state and to predict its end would greatly simplify the treatment of spontaneous hemorrhage. There are few clues at present and those that are available are not reliable. No changes in the blood, serum, the coagulation mechanism or the organism as a whole, except those I have mentioned, can be demonstrated. Delayed

bleeding, another of the hemorrhagic hazards of surgery, must have a mechanism similar to that which starts a spontaneous hemorrhage.

Estrogen is useful in other forms of bleeding not generally regarded as hormonal in origin. Among these gastro-intestinal bleeding and the hemorrhages of pulmonary tuberculosis already have been mentioned. Bleeding from tumors such as carcinoma of the cervix and uncomplicated internal hemorrhoids are two more. Four patients with carcinoma of the cervix had seven hemorrhages massive enough to warrant ligation of the hypogastric arteries and all were arrested by estrogen. The bleeding of uncomplicated internal hemorrhoids is thought to be due to constipation, hard stools or long standing. Forty-three patients had their bleeding stopped with intravenous estrogen. Some of these had been bleeding daily for weeks. As with nose bleeding, the intervals between hemorrhages became longer and longer if the estrogen was given right at the start, and bleeding in many cases did not return altogether despite the persistence of the hemorrhoids. Delayed hemorrhages such as those after tonsillectomy, hysterectomy, prostatectomy and traumatic wounds particularly of the eye responded unusually well. These hemorrhages occur between five and seven days after operation or injury and cannot be due to infection, sloughing or the failure of coagulation. Estrogen has been employed for the arrest of subarachnoid hemorrhage but the results cannot be stated with assurance since it can be useful only if the bleeding has not been too explosive and the damage irreparable. I have had one patient with recurrent subarachnoid bleeding demonstrated by spinal puncture who has not had a recurrence in five years. These results indicate that the prevailing beliefs of the origin of all of these hemorrhages and the views regarding bleeding lesions are erroneous.

Bleeding from the hypertrophied prostate is not uncommon. Usually the source is dilated venous channels in and around the

gland. But the cause must be endocrine because this kind of bleeding is easily arrested by intravenous estrogen. A valuable accession of this therapy is the diminution in the size of the prostate. Ende and I took advantage of this property of estrogen to induce atrophy of the prostate and have been able in many cases to avoid operation altogether.<sup>24</sup> When operation did become necessary, then if sufficient intravenous estrogen had been given for several days, bleeding was minimal and delayed hemorrhage did not occur. In this situation, the amorphous complex of equine conjugated estrogens is vastly superior to any of the synthetic compounds.

Another important use of estrogen therapy is the control of hemorrhages in the growing number of patients who are receiving anticoagulant therapy. Some of these patients bleed either spontaneously or after surgical procedures. Robert<sup>25</sup> reports the excellent results in such patients and in some cases discontinued the estrogen and replaced it with a placebo to find out if the bleeding would be resumed. When the hemorrhages recurred, estrogen again promptly controlled them. He reported also the excellent control of bleeding after dental extraction during anticoagulant therapy by this means.<sup>26</sup>

However the question arises as to whether the hemorrhages really were induced by the anticoagulant or whether spontaneous hemorrhage and bleeding associated with anticoagulant therapy have similar origins. The cases he describes differ only in minor details from many in my experience who have not received anticoagulant therapy and in these control of bleeding was equally effective. Just as hemostasis and coagulation are not synonymous, neither are the prevention of a clot and the precipitation of a hemorrhage. All of Roberts' patients, except one who bled into the skin, were bleeding from single sites and in that way were no different from those who bled spontaneously.

Spontaneous bleeding, in the vast majority of cases is from one circumscribed location; and the fact that wounds made to

reach these sites bleed little more than would be expected would indicate that, regardless of the systemic upheaval associated with these hemorrhages, the bleeding area is sharply demarcated. Bleeding from incisions and traumatized areas that would be expected if it were induced by anticoagulants does not occur. Thus the fear of surgery in patients who are receiving anticoagulants is unwarranted as has been shown by Littman and Brodman<sup>27</sup> and by Van der Veer<sup>28</sup> and his group as well as Roberts. Furthermore, the principal indication for anticoagulant therapy is for patients who already have given evidence of the tendency to bleed spontaneously into the walls of arteries since intimal hemorrhages created most of the lesions for which they are being treated.

Roberts reports suggest a new approach and open up new horizons in the study of cardiovascular disease. Spontaneous Hemorrhage cannot be produced experimentally except by powerful toxins such as Warfarin. This substance has some resemblance chemically to the anticoagulants and these compounds may in some way imitate or duplicate the enigmatic process of spontaneous bleeding. Whether it will induce intimal bleeding which so far is entirely absent in experimental atherosclerosis has yet to be ascertained.

Occasionally, spontaneous or surgical bleeding will persist for days, endanger the patient and resist every effort to control it. Cases of epistaxis such as the one described are not unusual and occur in childhood as well as in the latter years. Two instances of surgical bleeding, outside of my own experience, stopped by estrogen were of enough interest to be reported. Kavan<sup>29</sup> and his group were able to control the bleeding of a transurethral resection with diethylstilbestrol diphosphate after all other methods failed. They attributed the result to the neutralization of fibrinolysin by the estrogen. Whittington<sup>30</sup> reported a case of complete dental extraction in a known bleeder. Although the patient was carefully pre-

pared, bleeding continued for two days after the operation. She was then able to leave the hospital but was forced to return the next evening because of profuse hemorrhage. Sutures, packs, medical measures and transfusions were of no avail. Finally, after two more days when the patient's condition had deteriorated to the point where emergency measures were indicated, 20 mg. of estrogen was given intravenously. The bleeding stopped in 40 minutes and did not recur.

As far as it has been developed, estrogen therapy for Spontaneous Hemorrhage must be used with discrimination and discretion and with the acumen and judgment derived from experience. It will not stop the bleeding from large arteries, especially in the stomach and the nasal branch of the palatine artery in the nose. When 2 or 3 doses have been given an hour or so apart without a favorable result, then a bleeding artery must be suspected in the stomach and laparotomy is indicated. Consideration must always be given to the quantity of estrogen lost in the hemorrhage and larger doses may be required.

There is a vast difference in the action and results from synthetic estrogens and the amorphous equine complex. Marmorston<sup>31</sup> and her group proved with controlled studies that synthetic estrogens in small doses have no effect in preventing the recurrence of coronary thrombosis while the conjugated estrogens were valuable for that purpose. This amorphous complex of equine estrogens is the closest approximation now available to the human estrogen complex. Something in this complex, as yet undiscovered, cannot be replaced by synthetic estrogens.

The human estrogen complex is extremely complicated and new compounds in it are being constantly discovered. But there are no standards and quantitative determinations are not now possible. Sommers and Verendia<sup>32</sup> conclude in their appraisal of laboratory determinations of estrogen:

At present the complexity and expense of the chemical and bioassay methods for estrogen in

patients render them impractical for routine hospital use. Useful qualitative estimations of total estrogen effect may be obtained by cytologic examinations of vaginal or prostatic smears. Histopathologic study of biopsies of surgical specimens of the uterine cervix, endometrium, breast, and perhaps prostate gland and testis, may be successfully used in assaying the presence or absence of total estrogenic hormonal activity.

### Estrogen for the Prophylaxis of Hemorrhage

It was inevitable, after the numerous reports in the American and European literature attesting to the efficacy of parenterally administered estrogen for the control of spontaneous hemorrhage, that this hormone would be employed to prevent bleeding. The favorable results of the use of this therapy are contained in the reports of Fox,<sup>33</sup> Bobelis, Withers,<sup>34</sup> Goldberg,<sup>35</sup> Nathanson,<sup>36</sup> Rigual,<sup>37</sup> Servoss and Shapiro,<sup>38</sup> McDonough and Mulla<sup>39</sup> and many others. The unfavorable reports are characterized by giving the estrogen either an hour or so before or at the start of an operation and without due regard for the variables in each patient or an appreciation of what to expect.

Nathanson's report is of special significance. Controls would have served no purpose. In a consecutive series of 1,183 major oral procedures, including full mouth extractions, he expected troublesome bleeding in 10 per cent of the patients during operation and in 15 per cent afterward. Instead, only one patient had excessive bleeding and that was controlled in 13 minutes with an additional injection at the completion of the operation. In addition, fewer sutures were needed and pressure dressings were unnecessary after reductions of the zygomatic arch. The effect of intravenous estrogen was most marked in operations on soft tissue structures such as the tongue and the floor of the mouth and in extra-oral procedures.

The time to administer the hormone for this purpose is well in advance of any procedure such as, for example, cataract extraction or any operation on the elderly; or

if a delayed hemorrhage is anticipated as the frequent hyphema of ocular trauma, at the time of injury. History is also important for if there has been any tendency to bleed either spontaneously, of which epistaxis is the most common form, or after mild traumatic or surgical injury, then larger and more frequent doses will be required along with increased vigilance. Fortunately, no ill effects from this therapy have ever been reported nor are there any contraindications to its use. Since it is only short term therapy, there can be no damage to the endocrine system or the testicles. The carcinogenic property charged to estrogen is absurd.

Estrogen may have an essential and vital role in the prevention of intimal hemorrhages. These hemorrhages are believed by many authorities to be the precursor of the degeneration of the cardiovascular system, the development of atherosclerosis and the principal inciting factor of coronary occlusion. It has long been apparent that this hormone is responsible for the reduced incidence of cardiovascular disease in the menstruating female and that it exerts its influence even after the menopause. Studies now in progress indicate that the survival time and rate in men who have had a coronary attack and thereafter receive conjugated estrogens continuously in small doses is much greater than those who do not receive this therapy.<sup>40</sup> I have already elaborated on the theoretical aspects of the production of these hemorrhages from a vascularization process that develops within the intima, their relation to coronary thrombosis and other major vascular occlusions, and the creation of dissecting aneurysms. More than likely the effect of estrogen is due to the metabolic improvement of the ground substance as described by Schiff and Burn.

The prevention of the late occlusion of arterial grafts is another indication for the prophylactic use of estrogens. Retention of elasticity and flexibility in these grafts must await the invention of more suitable pros-

theses. When thrombosis does not supervene, the steady progression of the disease for which they were inserted is responsible for their failure. This disease starts with intimal hemorrhage and the purpose of therapy is to prevent intramural bleeding as well as to relieve spasm of the artery adjacent to the graft. I consider atheromatous disease to be just as subtle and malign as cancer and therefore believe that estrogen therapy should be pursued preoperatively, if the situation permits, with the same intensity as for a malignant disease, and postoperatively as long as it seems to serve a purpose, perhaps indefinitely. There is no conflict between this treatment and anticoagulant therapy or the imposition of dietary restrictions.

The dosage I employ for intimal disease is .625 mg. of conjugated estrogens daily but that is subject to considerable variation. Feminization symptoms are rarely encountered nor is there any diminution of libido in men. If either does supervene, then the hormone should be stopped for a week and then resumed with a smaller dosage schedule. Results are not always clearly evident but more often than expected there is an improvement in the cardiac reserve as shown by decreased fatigability and dyspnea. Not infrequently and certainly often enough to warrant a trial of this therapy is the enhancement of the cerebral circulation as shown by the change in mental attitudes, reduction of irritability, relief from depression, insomnia and sometimes nocturia and diminished reactions to emotional stress. These changes do not become apparent until the hormone has been given for at least 2 to 3 months. Then they may reach a plateau that often is retained for years and thus postpone for a time the ravages of "Father Time".

### Comment

Unfortunately, no formula can as yet be prescribed for the administration of estrogen either for a hemorrhage already in progress or for prophylaxis. Just because a hemorrhage has been arrested does not mean

it will not recur in a few hours or days, even if the bleeding point or area has been unquestionably eliminated. Nor is there any method for determining if prophylactic therapy will be successful for that would involve the ability to predict abnormal bleeding which so far cannot be done.

Dosages of estrogen are extremely variable just as they are for any condition in which it has been found to be useful such as the menopause. It is a common experience that some women require much more than others to dispose of the uncomfortable hot flushes. Hertz<sup>34</sup> and his associates showed that large intravenous doses of estrogen will stay in the blood of elderly people with asthenic diseases but who are not bleeding for about eight hours. That is not in accord with clinical experience. Much depends upon the inherent production of estrogen and much more upon the rate of absorption, conversion, destruction and utilization. If the bleeding state is in operation, then the whole organism is in an upheaval and the increased metabolism of estrogen requires larger quantities. Moreover, just what estrogen does during the bleeding state, whether it neutralizes the toxin I have postulated or restores the hormone balance is not known. The only guides now can be the bleeding state and the arrest of hemorrhage and one is as important as the other.

Even less reliable are the rules for prophylactic therapy for they must be based more upon the hope of empiricism than on logic. The work of Schiff and Schiff and Burn furnishes a more tangible basis for using this therapy. The absence of the hemorrhagic factors of bleeding does not mean that the patient is not a potential bleeder and subclinical bleeding states may exist. Hence the action of estrogen on the ground substance of the potential bleeder may mean the difference between a simple or a troublesome procedure. The elderly are more likely to have a faltering endocrine balance and impaired vascular integrity than the young and therefore I use it in all cases when the patient is above 50, especially for prosta-

tectomy, vaginal procedures and hernias. Weakening of the ground substance in connective tissue may be the reason for the sudden enlargement of expanding lesions such as cystocele, rectocele and hernias that so often occurs during the declining years and that is another indication for the use of estrogen after the age of 50 in men as well as women.

Estrogen is not a panacea and miracles should not be anticipated when it is used either to arrest or prevent bleeding. It surely will not replace good technic, sound judgment or experience nor can it be expected to stop bleeding as one turns off a faucet. So many variables enter into the bleeding state that one form of therapy may not be adequate for all and other hormones or compounds or combinations may eventually be found to be more useful. Not only age but also chronic and severe coexisting disease of other organs, a generally depressed metabolism, prolonged illness, asthenic states or senility also can be part of the overall picture. Estrogen will not stop the bleeding from large vessels and if the hemorrhage continues, then it is likely that one is open and operation is indicated. Nor is it infallible, but when used with discretion it will prove a valuable adjunct after enough experience has been obtained with it. Even in functional uterine bleeding, although the source is obvious and the cause is known to be a hormonal imbalance, our present methods and means are often inadequate and resort must be taken to surgery. But it would be irrational to use this last resort before an attempt to control the bleeding with hormonal therapy.

One example of the confusion, controversy and contradictory advice in the literature is found in the treatment suggested for bleeding from the stomach and more specifically erosive and hemorrhagic gastritis. This disease now is thought to occur much more frequently than was formerly suspected. Here are five different versions of the management of this disease: Palmer says that when erosive gastritis has been

shown to be the cause of bleeding and all other methods fail to stop it (he does not mention hormone therapy) then nothing less than total gastrectomy must ordinarily be the treatment of choice. Hardaway, after pointing out that gastritis ranks first as a cause of upper gastro-intestinal hemorrhage, concludes that empiric gastrectomy probably is not justified or useful. Manning and O'Connor<sup>42</sup> employed medical treatment exclusively and relied mainly on the natural tendency of spontaneous bleeding to stop without treatment. Transfusions were used sparingly and only for the relief of local or general anoxia. Wangensteen<sup>43</sup> found that cooling the bleeding stomach by a continuous ice water lavage stopped the bleeding. My opinion is that the stomach, like the uterus, is only the source of bleeding and not the cause and that hormone therapy directed at the cause should be the first resource and not the last. My experience with 26 cases has been that when combined with adequate fluids and sedatives, intravenous estrogen brings about a striking reduction in the number of transfusions and operations.

The value and virtues of estrogens for many conditions not ordinarily associated with deprivation of this hormone have not been fully exploited. One striking example is Roberts'<sup>44</sup> report of its use in diabetic retinopathy in which he contradicts Winter's<sup>45</sup> statement that early case finding and strict control are the only methods now available for the prevention or modification of the degenerative vascular complications of this disease. Winter noted that the degree of this complication of diabetes may be related to the duration of this disease but not to its severity as measured by the insulin requirement.

Roberts describes 7 cases and goes into great detail regarding the pathogenesis of this disease and the hemostatic and numerous metabolic and endocrine effects of estrogens. Actually, he took advantage of the faculty of this substance for preserving vascular integrity and applied it to diabetic

retinopathy. Retinal changes, according to Roberts, begin in the veins with the preliminary steps in the development of the microaneurysms that are so characteristic of this disease. Hemorrhage, both gross and microscopic, is common. He states that not only were hemorrhages prevented but their absorption was accelerated. In addition, as a result of the regression or disappearance of fundal exudates, vision in some cases was markedly improved; and he proved this point by replacing the hormone with a placebo whereupon the visual improvement quickly was lost and did not return until the hormone was renewed. He recommends estrogens not only for the prophylaxis and therapy of diabetic retinitis but also as an adjunct for the treatment of the diabetes itself since it has the property of enhancing the effects of insulin or other hypoglycemic compounds, thus reducing their dosage.

The question of transfusions always arises in any bleeding episode regardless of whether it is surgical or spontaneous. The indications for them are much clearer in the former than the latter. Transfusions often are used in immense quantities in spontaneous bleeding because of shock and its attendant hypotension but these signs do not always denote that large amounts of blood are being lost. In my opinion cerebral anoxia is a much more reliable guide for transfusions than the degree of shock. Reduction in blood pressure is one of the principal defenses against further loss of blood and pouring in blood just to have it poured out can be shocking in itself. Furthermore, patients who are bleeding spontaneously seem to withstand the loss of large quantities of blood with impunity; and it is not unusual for a transfusion to renew a hemorrhage. For these reasons, transfusions should be used with caution and not in excessive numbers. It is my practice to give two or more doses of estrogen first and then if transfusions are deemed advisable, to incorporate additional doses in the blood. In that way loss of a large part of the administered estrogen in the escaping blood can be par-

tially avoided and the number of transfusions significantly reduced.

The utility of isotonic solutions to replace blood volume seems to have been forgotten. Regardless of how temporary their effect may be, they have advantages that cannot be ignored even though intravenous estrogens cannot be mixed with them and must be administered separately or with D 5 water or blood.

### Summary

Every branch of medicine must contend frequently with hemorrhage of obscure origin and from uncertain sources. Epistaxis, gastro-intestinal, cerebral, intimal, pulmonary and delayed hemorrhage are some of the common forms of this kind of bleeding. I have advanced the theory that these hemorrhages are hormonal in origin and therefore require hormonal therapy. This disease, which I have called spontaneous hemorrhage, is now treated as if it were surgical or traumatic bleeding. This mistake becomes apparent when bleeding returns after the source has been unquestionably eliminated as so often happens in gastro-intestinal bleeding.

Coagulation and hemostasis are not synonymous. Estrogen has no effect on coagulation. Its action is upon the hormonal imbalance which damages the vascular bed and precipitates the hemorrhage. Experimental and clinical evidence indicates that it strengthens the ground substance and thus enables the vessels to resume their normal role in hemostasis.

The source of bleeding must be carefully distinguished from the cause as in functional uterine bleeding and hemorrhagic gastritis. Studies of the so-called hemorrhagic factors do not explain the differences between bleeders and non-bleeders. Tests in existence now are not accurate enough to detect the bleeder.

The numerous reports of the success of intravenous estrogen for controlling these hemorrhages have led to its widespread use

and also to its abuse. The proper use of this therapy depends upon understanding the theory of spontaneous hemorrhage and the bleeding state and that its purpose is to duplicate as far as possible the self-arresting mechanism which stops the majority of these hemorrhages without treatment. When it fails, it is usually because a vessel too large for any measure short of ligation is bleeding. This failure can be a valuable criterion in making decisions on when to operate.

Estrogen and other hormonal therapy, although not infallible, have often achieved startling and dramatic results when all other methods, including surgery, have failed. When used as a first and not a last resort, experience has shown that estrogen will rapidly control most spontaneous bleeding and markedly reduce the number of transfusions and operations. Reports of its prophylactic action, particularly in preventing intimal hemorrhage and coronary thrombosis, are encouraging.

Abuses result from indiscriminate selection of cases, early abandonment of treatment, failure to understand the goals of therapy and inability to interpret the results. Cases of persistent epistaxis, gastro-intestinal bleeding and potential delayed postoperative bleeding are presented as examples of the proper use of estrogen.

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The estrogens used in this study were Premarin and Intravenous Premarin, Ayerst Laboratories, N. Y.

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### Heart Fund Campaign

Once again it is Heart Month. During the entire month of February, the Virginia Heart Association and Chapters will conduct a campaign to raise \$550,000 to continue and develop their programs of heart research, education, and community service.

The necessity for combating the public's No. 1 Enemy, diseases of the heart and circulation, is well known to the members of the medical profession. They know quite well what has been achieved through heart research. They know, also, that much more needs to be learned if heart disease is to be conquered. The Heart Association is dedicated to defeating this health enemy.

In Virginia, Heart Fund dollars go into a variety of heart programs. Many of these dollars go into the financing of heart research at the University of Virginia School of Medicine and at the Medical College of Virginia, including a recently established Chair of Cardiovascular Research at the lat-

ter institution. Virginia Heart Association also pools Heart Fund dollars with American Heart dollars to support heart research at institutions outside of Virginia. Other Heart Fund dollars finance rehabilitation programs, loan closets for heart patients, educational programs, including the showing of heart films, distribution of heart literature, presentation of teaching models of the human heart to public school systems, colleges, and schools of nursing, and also the purchasing of oxygen equipment for rescue squads and lifesaving crews where need is proved.

No one can say how much should be given in a year toward the defeat of heart disease. Enough has been given only when victory has been achieved. Gifts to the Heart Fund are not charity. They are protection for all hearts.

As the Heart Fund slogan says, "More will live the more you give."

# Clinical Evaluation of a Tranquilizer/Anticholinergic Combination in General Practice

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*Although not a threat to life, "nervous indigestion" causes much suffering and accounts for an appreciable segment of the physician's practice. Excellent relief of this condition has followed the use of the drugs described here.*

THE SYNDROME we call "Nervous Indigestion" is one of the most frequent conditions encountered in medical practice. Yet it is difficult to describe and delineate; its symptoms may vary from gas and eructation to nausea and vomiting, from anorexia to increased appetite, from vague discomfort to the severe pain of peptic ulcer.

Whatever we name this type of malfunction, one constant factor is that of anxiety or stress. The precise role of anxiety in the production of gastro-intestinal disorders has not been fully clarified, but most clinicians agree that it has a good deal to do with the intensity of symptoms, and, in many cases, may be the reason for their existence.

For many years, sedatives have been combined with the antispasmodics, in the treatment of emotionally caused gastro-intestinal symptoms. More recently, various tranquilizers have been harnessed to anticholinergics, in an effort to find a more effective therapeutic agent. Some of these have proved to be unsuitable because of side-effects. Drowsiness, for example, can seriously interfere with normal activities such

as work or driving an automobile; or stimulation of gastric secretion, as with Rauwolfia alkaloids, is undesirable. Several of the piperazinyl phenothiazines, however, have shown promise as adjuvants in the treatment of functional gastro-intestinal disorders, as well as in peptic ulcer.

Trifluoperazine (Stelazine), one of the newer anti-anxiety agents, seems especially suitable in this respect. Smith and Thomas found that fractional gastric analyses in five known hypersecretors showed no significant difference before and after administration of trifluoperazine.<sup>1</sup> Two further advantages are also offered by this medication: Proctor and Gunn demonstrated that the drug did not disturb the exercise of manual skill,<sup>2</sup> and numerous authors have stated that the convenient b.i.d. dosage of trifluoperazine is adequate and efficacious.

In searching for an improved anticholinergic, various investigators have noted that isopropamide iodide (Darbid) appears to be a potent inhibitor of gastric secretion, effective in inhibiting gastro-intestinal peristalsis, and therapeutically active for 10 to 13 hours after administration.<sup>3,4,5</sup>

A busy practitioner, without free time and access to research facilities, rarely can evaluate scientifically the action of a new therapeutic agent. However, he is trained to observe its effects, particularly in his own patients whose reactions and idiosyncrasies are already known to him. Often this enables him to make a valid estimation of its usefulness in daily practice. He must, however, constantly keep in mind the special difficulty in judging results in conditions where anxiety is involved. Many such conditions are the result of some acute stress,

and may be self-limited. The incidence of placebo reactions is bound to be high among such patients.

Mindful of the pitfalls of such an effort, an informal clinical evaluation of a combination of these two drugs was made in 100 patients who had a variety of gastrointestinal symptoms, but who could all be classified as having some variation of the syndrome of "nervous indigestion". The cases were consecutive; any patients who could not be followed were dropped from the study.

Of the 100 patients, 52 were women and 48 were men. They ranged in age from 10 to 83 years, with the great majority between 35 and 59. In all cases there were elements of both nervousness and gastrointestinal malfunction, but the predominant symptoms were thought to be emotional in 54%, gastro-intestinal in 46%. The following table illustrates the frequency of various symptoms:

Gas	82%
Indigestion	81%
Hypermotility	71%
Nausea	33%
Anorexia	27%
Hyperacidity	11%
Constipation	7%
Diarrhea	5%

Of interest is the frequency of the following conditions associated:

Irritable Colon	24%
Ulcer Syndrome	9%
Ulcer (proved by X-ray)	
Peptic	4%
Esophageal	1%
Alcoholism	5%
Functional Hyperinsulinism	3%
Globus Hystericus	2%

### Dosage

The test medication consisted of tablets containing 1 mg. of trifluoperazine and 5 mg. of isopropamide (Stelabid). Initial dosage was one tablet b.i.d. in all but three

cases, where two b.i.d. or one t.i.d. was prescribed. Patients usually were maintained on the drug for at least two weeks, after which clinical response was assessed. In a few instances, after variable periods of time, reduction to one tablet daily was possible, but most patients were given the medication b.i.d. throughout. A few obtained relief in a few days and discontinued the medication; some took it p.r.n., either in definite courses or when symptoms recurred. Most patients took the combination from one to two months; many continued it for two to four months; and some are reluctant to discontinue it now, after up to fifteen months!

### Results

On the whole, one could say that this group of patients showed a most favorable response to the medication. Of the 100 cases, 81 received complete relief (excellent); 10 were considered good. Three received some benefit, and 6 showed no improvement. Four of the five proven ulcers, including one esophageal ulcer with esophagitis, were considered excellent, when the medication was given in conjunction with antacids and diet. The fifth did better on more intensive anticholinergic therapy.

Five patients experienced side-effects: one of grogginess, one of nausea, and three of dryness of the mouth. Three of them discontinued the medication, the other two found that one tablet daily was adequate to control symptoms and did not produce uncomfortable dryness. Six patients required additional sedation.

In order to substantiate subjective claims of relief in cases of hypermotility, two patients underwent a two-part gastro-intestinal examination. Each of them, following a 12-hour fast, received a barium test meal, and x-rays were taken at two, four, and six-hour intervals. Hypermotility was clearly demonstrated. Then they were given the medication and the x-ray series was repeated, after a period of therapy. Both responded

well to the test drug; intestinal transit time was greatly prolonged, and marked improvement in the spasticity was noted. One of these cases is described below.

### Case History

E. C., a 59-year-old female school teacher, had noted a persistent loss of weight over the last 12 months. She was extremely anxious and nervous, and firmly believed that she had cancer. She complained of constant eructation, easy fatigue, insomnia, and had frequent suspiciously whitish stools. She was checked carefully and found to be essentially normal, except for obvious weight loss, anxiety, and tenderness of the RUQ and right CV angle. Her blood count was normal, except for mild leukocytosis and sedimentation rate of 17 mm. PBI was 6.8. Blood cholesterol factors and liver function studies were normal, as was the urine. Her three-hour post-prandial blood sugar was 80 mg. % Gall-bladder x-ray was normal, but the G.-I. series showed extreme hypermotility.



Fig. 1. Pre-Treatment. X-ray taken 7/14/60, six hours after ingestion of barium.

She was given Stelabid, two tablets b.i.d., and after three weeks cut down to one tablet b.i.d. A second series of x-rays was taken eleven days after the first, and showed a marked slowing of the meal and improvement in the spastic pattern.



Fig. 2. After medication. X-ray taken 7/25/60, six hours after ingestion of barium.

Clinically, the patient began to gain weight; she was not as continually hungry or nervous. She slept better and had a better outlook on life. After two months, she discontinued the medication, taking an occasional tablet when she felt gas or the signs of hypermotility. She has continued to gain weight slowly and show general improvement.

### Summary

A clinical survey of 100 patients with nervous dysfunction of the gastro-intestinal tract treated with a combination of tri-fluoperazine and isopropamide iodide (Stelabid) is reported.

Of the patients, 81% were considered to have excellent results. Four of five proven

ulcers responded well. Five patients had side-effects, causing three to discontinue medication. Motility studies, using the barium test meal, showed marked prolongation of transit time. One case history is cited.

It is felt that this combination can be considered a valuable adjunct in treating the frequent condition of nervous malfunction of the gastro-intestinal tract.

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#### MONTHLY REPORT OF BUREAU OF COMMUNICABLE DISEASE CONTROL

	Dec. 1961	Dec. 1960	Jan.- Dec. 1961	Jan.- Dec. 1960
Brucellosis -----	1	0	18	34
Diphtheria -----	2	9	12	39
Hepatitis (Infectious) -----	146	81	1562	845
Measles -----	508	967	12,308	7595
Meningococcal Infections -----	4	7	45	65
Aseptic Meningitis -----	2	3	86	45
Poliomyelitis -----	2	11	14	58
Rabies (In Animals) -----	6	23	185	226
Rocky Mt. Spotted Fever-----	0	0	49	40
Streptococcal Infections -----	518	538	6213	6066
Tularemia -----	6	5	23	39
Typhoid -----	0	2	21	24

# Unusual Pulmonary Malignancy in Females

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*Malignant tumors of the lung are not exclusively the property of the male. That they occur in females, even in children, is shown by the cases presented here.*

THE APPEARANCE OF CARCINOMA of the lung in the middle-aged adult male is not unusual and is seen with increasing frequency by the roentgenologist and chest surgeon alike. These malignancies are usually one of three in decreasing order of occurrence—epidermoid or bronchogenic carcinoma, alveolar cell carcinoma, or adenocarcinoma. Their appearance is quite characteristic except for alveolar cell lesions that have an infiltrative appearance simulating a chronic area of pneumonitis or inflammatory reaction. Table I<sup>1</sup>

monary malignancies. One case involves a thirty-five year old white female with a diffuse, almost unresectable alveolar cell carcinoma of the lung whose x-ray was close to normal in appearance. The second patient presented is a six year old white female with a completely unresectable alveolar cell or adenocarcinoma of the left lung. The third patient presented with an unresectable adenocarcinoma of the right lung having a rather unusual x-ray appearance. The fourth patient had a malignant bronchial adenoma.

## Case Presentations

Case I—M. C., 35 year old white female had been chronically ill for approximately four months. Chest x-rays at the time of her first physician visit revealed a small infiltration in the right posterior lung field which cleared later. This patient had a slight cough which was non-productive and had no hemoptysis. Repeat x-ray studies revealed a confusing picture of clearing and recur-

TABLE 1

	No.	Unresectable	Resectable But Incurable	Resectable and Curable
Epidermoid carcinoma.....	18	8	3	7
Alveolar cell carcinoma.....	8	0	2	6
Adenocarcinoma.....	3	0	1	2
Anaplastic carcinoma.....	10	2	8	0

Table indicates the experience of the author regarding resectability as it correlates with tumor type.

The occurrence of carcinoma of the lung in females is quite rare but does occur with enough frequency to warrant a high index of suspicion if curable resections are to be expected.

The following four cases present rather unusual early symptoms and x-ray appearances of what were later found to be pul-

monary infiltrations. It is felt by this author that the average physician would have placed such a patient on broad-spectrum antibiotics with reassurance that she had nothing more than an inflammatory infiltrative lower lobe lesion. The patient felt better without antibiotics, but a final x-ray, after two months of observation, re-

vealed the persistence of an infiltration in the right lower lobe area. Subsequently, bronchoscopy and bronchograms were performed. These revealed poor filling of the distal segments of the lower lobe bronchus and a thoracentesis revealed a small amount of rather amber colored fluid which was positive in cytological examinations for malignant cells. It was felt that this patient had an infiltrative alveolar cell carcinoma, probably restricted to the lower lobe and, therefore, a thoracotomy was performed.

At the time of operation the entire inner surface of the pleura was studded with

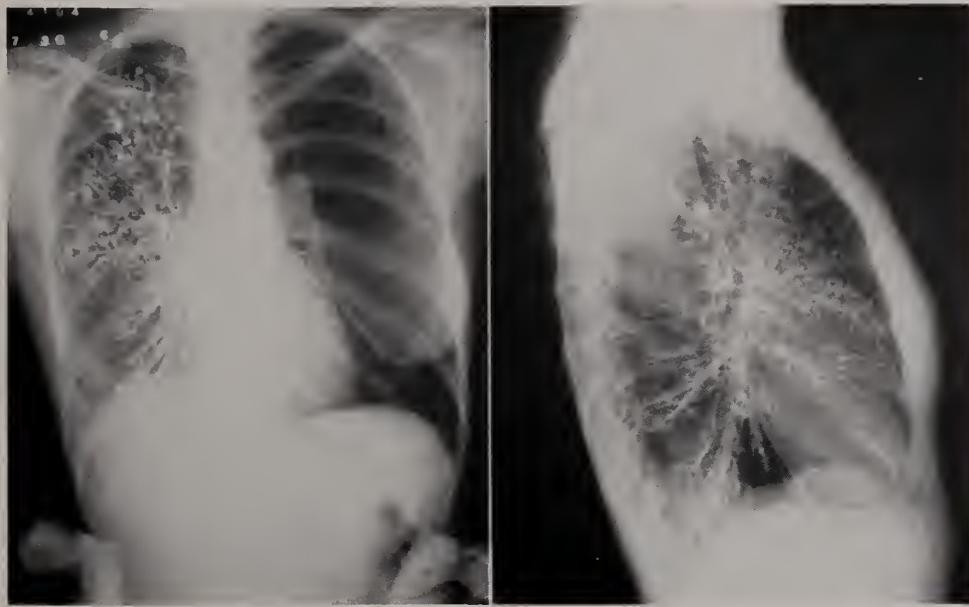
to obviate the possibility of the spread of viable tumor cells into the circulation.<sup>3,4,5</sup>

The fact that rather extensive pleural spread had occurred means that a cure is extremely unlikely.

This patient represents a very interesting study of a chest x-ray which can indeed be almost normal and yet contain a tremendous amount of pathology.

The tumor type was alveolar cell carcinoma.

Case II—D. T., a six year old white female had been followed for approximately eight months because of what was originally



Case I—Figs. 2 and 3—Demonstrates a bronchogram with poor filling of the middle lobe region. This obstruction to the distal bronchus was thought most likely to represent a diffuse tumor such as alveolar cell carcinoma.

tumor implants which also extended to involve the diaphragm. The lower lobe was completely replaced with rather dense tumor. A pleura pneumonectomy was performed with resection of the diaphragm and removal of all palpable tumor. A radical pneumonectomy,<sup>2</sup> that is, skeletonizing the trachea with removal of the pericardium, phrenic and vagus nerves was performed, and all nodes examined from this region were negative for tumor. The patient had an uneventful postoperative recovery. She was treated with 20 mg. of Nitrogen Mustard intravenously at the time of surgery

diagnosed as a viral pneumonia in the left upper lobe. This infiltration persisted and became gradually worse and more consolidated with the patient having some shortness of breath and intermittent febrile episodes. She was finally admitted for evaluation, that is, bronchoscopy, bronchograms, sputum studies, etc. At the time of bronchoscopy the entire left mainstem bronchus was completely occluded by an extrinsic pressure. A bronchogram performed under anesthesia revealed no filling on the left side and because of the patient's shortness of breath and what appeared as a massive tu-

mor replacing the left upper lobe, an emergency thoracotomy was done at that time. A completely inoperable alveolar cell carcinoma of the left lung with replacement of the left upper lobe, extension to the pericardium and to the diaphragm was found. This unfortunate infant received a course of Nitrogen Mustard but it was felt that Cobalt and x-ray therapy were contraindicated because of the large surface area of this rapidly growing malignancy which might cause unfortunate later symptoms of

unresectable adenocarcinoma of the right middle lobe with extension to the pericardium and, indeed, to the myocardium itself. It was not possible to remove this lesion. This patient was treated with Nitrogen Mustard and given a course of Cobalt therapy to the mediastinum. She has now gone one year following this therapy but is going rather rapidly downhill at the present time.

This presents a rather unusual lesion specifically limited to the middle lobe and consisting of an infiltrative adenocarcinoma



Case I—Fig. 1—Demonstrates a minimal infiltration at the right base. This was fleeting and cleared almost completely on several occasions.



Case I—Fig. 4—Postoperative x-ray following a pleural pneumonectomy for extensive alveolar cell carcinoma. This case demonstrates the far-advanced state which a pulmonary malignancy can achieve with minimal x-ray appearance of abnormality.

infection or slough. The unusual nature of this lesion and its occurrence in a six year old child, we felt, was worthy of note.

Case III—Mrs. M. R., a 56 year old white female was ill for approximately six months with a cough, weight loss, and one episode of slight hemoptysis.

Bronchoscopy and bronchograms revealed poor filling of the middle lobe with an x-ray appearance of an infiltration in this region. It was felt that this patient had a middle-lobe syndrome because of the nature of the selective middle-lobe obstruction and the history of infection. However, at the time of thoracotomy she was found to have an

which could possibly have been cured had an earlier diagnosis been obtained.

The x-ray appearance of a middle-lobe syndrome with history of pulmonary infection was grossly misleading. Attention, therefore, is again focused on this fact. Early chest x-rays must be obtained and suspicious infiltrations followed up by bacteriological study. If such pulmonary lesions do not clear in four to six weeks an exploration is urged.

Case IV—This 37 year old white female had been ill for approximately 7½ months. She had considerable intractable cough which had become progressively worse with

a posterior inferior chest pain thought to be pleuritic in nature by the referring physician. Chest x-rays revealed a middle-lobe



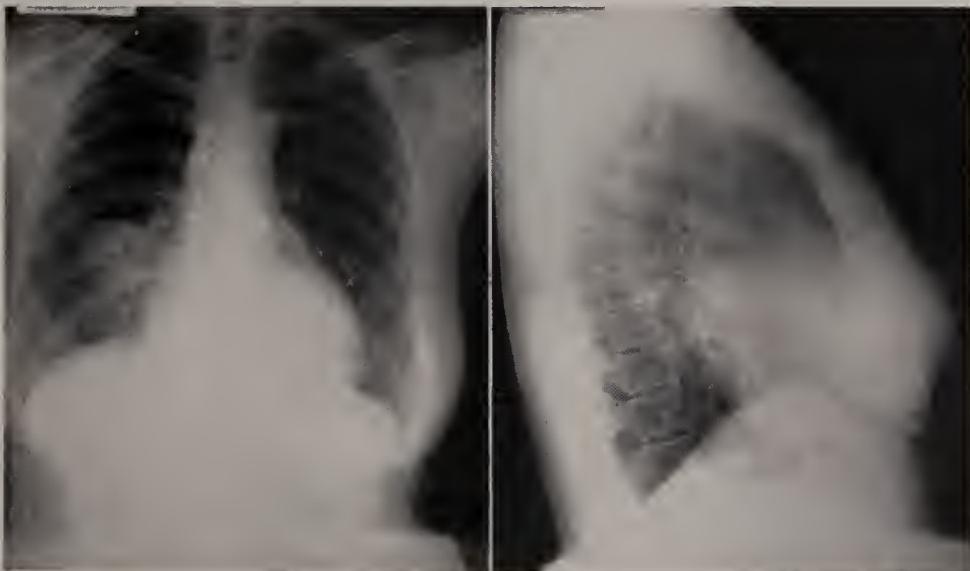
Case II—Fig. 1—A six year old white female with unresectable undifferentiated or possibly alveolar cell carcinoma of the left lung.

to be a malignancy. Biopsy revealed a bronchial adenoma—carcinoid type—which appeared microscopically benign. At the time of thoracotomy this was proved to be incorrect and the gross appearance was that of a wildly malignant tumor with extension to the hilum, pericardium, superior vena cava, etc., making resection impossible. The patient was given a course of Nitrogen Mustard and Cobalt therapy following surgery.

The unusual nature of this lesion simulating a middle-lobe syndrome and the microscopic appearance of a benign bronchial adenoma are worthy of note.

### Discussion

The occurrence of pulmonary carcinoma in the male has become increasingly accepted during the past fifteen years. The statistics now reveal that carcinoma of the lung occurs in a ratio of approximately 10 to 1 favoring the male. Usually the patient is about middle-aged, that is, from forty to sixty years of age, and usually is or has been a heavy cigarette smoker for approximately



Case III—Figs. 1 and 2—A 56 year old white female with an apparent middle-lobe syndrome found to have an unresectable adenocarcinoma of the lung at the time of thoracotomy.

syndrome which did not clear after treatment with broadspectrum antibiotics.

At the time of bronchoscopy a large lesion obstructing the middle and lower lobe bronchus was seen and this was thought

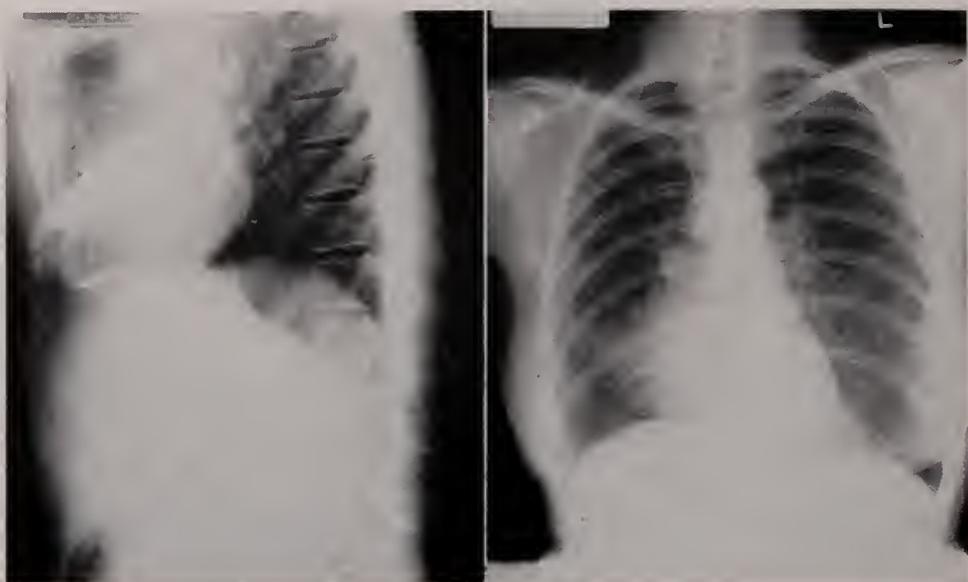
fifteen years. Heavy cigarette smoking refers to one or more packs a day during this interval. The statistical evidence relating cigarette smoking with carcinoma of the lung does not necessarily imply that this

relationship is causative, but certainly there seems to be a strong statistical case for cause and effect.

The occurrence of carcinoma of the lung in females remains relatively rare. The epidermoid or bronchogenic type carcinoma which more generally occurs in the males is exceedingly rare. The alveolar cell or adenocarcinoma is more predominant and yet even this does not occur with frequency.

The four patients presented here represent a contrast in forms of carcinoma as well as in the methods of diagnosis—whether early or late, and therefore in the form of therapy which they received.

is established. There is usually a secondary infection distal to the obstructing lesion even in an alveolar cell carcinoma and certainly in the more proximal bronchogenic carcinoma. These infiltrations distal to an obstructing growth will often clear with antibiotics and mislead the physician into a state of complacency. I feel that the correct approach to these infiltrations should be a bronchoscopy and bronchogram with care to obtain adequate saline washings for cytology and bacteriological study. If these studies are within normal limits and the infiltration persists then perhaps a course of broadspectrum antibiotics should be given



Case IV—Figs. 1 and 2—A 37 year old white female with x-ray appearance of middle-lobe pneumonia followed for eight months prior to bronchoscopy. Found to have inoperable carcinoma (malignant adenoma) at the time of thoracotomy.

It is only obvious to mention that early diagnosis is mandatory if adequate palliation or possible cure is to be obtained by surgery.<sup>6</sup> The case of M. C. reveals how phantom-like a diffuse infiltrative alveolar cell carcinoma can be, and that a physician's attention should immediately be drawn to any abnormality in a chest x-ray—such as a persistent or recurrent infiltration which is unexplained. Also of importance is the fact that undiagnosed pulmonary infiltrations should not be randomly treated with large doses of broadspectrum antibiotics before a correct bacteriological diagnosis

over a three to four week period to see if the lesion clears. If the area of infiltration persists or recurs despite this form of treatment then early lung biopsy is strongly indicated. The figures in Table II indicate that if these lesions can be diagnosed at a relatively early date they may fall into the resectable category. The five-year survival is thereby appreciably increased to greater than 20%. If one takes all comers with carcinoma of the lung, the five-year survival is appreciably less than 10% due to the fact that many are unresectable and incurable at the time when first seen.

## Summary

1. Carcinoma of the lung in females is briefly discussed with a presentation of four cases felt to be unusual by the author.

fashion can then be given broadspectrum antibiotics for four to six weeks. If, at the end of this time, the infiltration still persists exploratory thoracotomy is advised.

TABLE 2

SENIOR AUTHOR AND YEAR	Number Resected	Per Cent Resected Patient 5-Year Survival
Churchill—1950.....	69	14.5
Overholt—1956.....	234	22
Ochsner—1956.....	...	15
Watson—1956—		
Radical pneumonectomy.....	74	27
Less than radical pneumonectomy.....	42	23.8
Gibbon—1956.....	145	21
Johnson—1958.....	116	26.7

2. The varying degrees of success in handling carcinoma of the lung are directly related to early diagnosis. Even adequate palliation can not be performed in the far-advanced stages, whereas a resectable but incurable lesion may afford considerable palliation.

3. The occurrence of a far-advanced unresectable carcinoma of the lung in a six year old child is presented as an unusual occurrence.

4. Any unusual pulmonary infiltration should be thoroughly investigated by means of a bronchoscopy, bronchogram, cytological and bacteriological studies, prior to the giving of broadspectrum antibiotics. An unexplained or recurring pulmonary infiltration having been approached in this

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## Funerals Are Expensive

Nobody several years ago survived the series of illnesses that I have had. If someone tells me that the medicines I carry are expensive I must laugh, particularly when I

read circulars advertising graves. I would rather pay for a medicine than a grave any day.—George E. Sokolsky, columnist, King Features Syndicate.

# The Use of Ouabain in Clinical Practice

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*Although ouabain has been in use for many years, it is not employed as widely today as it probably deserves. It is a potent, rapidly acting drug, especially adaptable to emergency digitalization.*

THE STROPHANTHIDINS today are among the most neglected therapeutic agents in American medicine. Strophanthidins are capable of producing dramatic results in critical cardiac situations, yet relatively few physicians in this country have had experience in their use. Prejudice against this group of cardiotonic drugs has originated from the known toxic effects and fatalities following exhibition of one of the strophanthidins. Because of this prejudice, physicians have been reluctant to use them and, therefore, have had little opportunity to observe their salutary effects in clinical situations where time is of extreme importance. Our experience has been in the use of one of the strophanthidins, that is G-strophanthidin (ouabain), and the remarks following are pertinent to its use. It is realized that other strophanthidins, such as K-strophanthidin, may likewise be very valuable as agents for use in emergency situations.

The unpopularity of ouabain (G-strophanthidin) probably dates from the time of Livingstone's expedition to Africa when it was discovered that the arrow poison used by the natives was a strophanthidin.<sup>1</sup> Fraenkel used strophanthidin extensively in Krehl's Clinic in Strasbourg in 1905-1906,

obtaining excellent results when it was administered intravenously.<sup>2</sup> The popularity of the drug was quite transient when, due principally to improper dosage, deaths were reported following its use. Strophanthidin has never overcome this ill-deserved reputation in America.

The place of ouabain in modern, clinical cardiac therapy is in the treatment of emergencies when a quick-acting, digitalis-like preparation is mandatory and may be life-saving. One may well ask what qualities such a drug should possess to be most useful in the treatment of a patient in dire distress, such as rapid auricular fibrillation with pulmonary edema. In order to limit the discussion, ancillary measures such as oxygen, narcotics, aminophylline, and others will not be discussed. The drug certainly must possess a very prompt action. Its beneficial effects must be sufficiently prolonged to be clinically significant. Its toxicity must not be prohibitive. One digitalis-like agent, acetylstrophanthidin, is more rapid than G-strophanthidin (ouabain), having an onset of action of one to five minutes and reaching a peak action in 10 to 15 minutes. These attributes are the basis of a digitalis tolerance test utilizing acetylstrophanthidin.<sup>3</sup> Unfortunately, acetylstrophanthidin is dissipated in about two hours, so it is impractical to rely upon this drug for prolonged clinical usefulness. Ouabain has an onset of action of three to 10 minutes, with a peak action of 30 to 60 minutes. Although ouabain may be metabolized in 24 hours, its beneficial effect in cardiac slowing and improvement of the circulation may last for several days, up to four or five days and even longer. Desacetyl-Lanatoside-C (Cedilanid D) has an onset of action of 10 to 30

minutes, with peak action of one to three hours. Like ouabain, the beneficial slowing due to Cedilanid D may last for several days. One can see from the above comparison that ouabain has a faster onset of action and a faster peak action than Cedilanid D. Cedilanid D is an excellent drug and has been used extensively. In general, it is satisfactory for most occasions requiring emergency digitalization. However, it is our opinion that the more rapidly acting ouabain has been preferable by virtue of its speedier action and, indeed, may have been effective when Cedilanid D has been ineffective.

Since ouabain possesses the speed of action and the duration of action listed as ideal qualities in an emergency digitalis drug, the question remains as to its toxicity. Any potent digitalis compound is capable of producing toxicity; otherwise, it is not therapeutically useful. Ouabain's unpopularities stem largely from a failure to appreciate its time of action and failure to appreciate the proper dosage. An average full-digitalizing dose of ouabain is 0.75 mg. intravenously. No strophanthidin derivatives are effective orally. Every digitalization is a biologic experiment and must be individualized. Thus, the "average" dose may vary up or down in a given patient. A patient with chronic congestive failure subjected to potassium-depleting diuretics or other measures, may become toxic on a much smaller dose.<sup>4</sup> A patient with auricular flutter, mitral stenosis, and a relatively normal myocardium, may require considerably more. In general, one never gives a full dose (0.75 mg.) of ouabain at once. To do so would certainly increase the list of fatalities attributed to the strophanthidins. In a previously undigitalized patient, one may administer 0.25 mg. intravenously, and 0.1 mg. intravenously every half-hour thereafter until the desired effect is obtained. Some physicians start with a dose as high as 0.5 mg. intravenously, followed by half-hourly doses of 0.1 mg.<sup>5</sup>

Patients who have been previously digitalized, or in whom the status of digitalization is unknown, pose a more difficult problem. The statement has been made that ouabain should never be administered if the patient has received digitalis recently.<sup>6</sup> Although previous digitalis administration makes caution mandatory, ouabain can be given with relative safety if proper precautions are taken. One may begin with 0.2 mg., or occasionally even 0.1 mg. intravenously, repeating the dose of 0.1 mg. every half-hour until the desired therapeutic effects are obtained or evidence of toxicity appears. By adhering to the above principle, we have had no fatalities in a fairly sizable number of cases in which ouabain was used. Some of the preceding notes may be illustrated by a few selected case histories:

E. J., a colored male, 52 years of age, had been seen for a period of approximately one year. The patient had had frequent angina pectoris, intermittent claudication, aortic insufficiency (probably rheumatic) and had been in congestive failure. The latter had responded well to the usual therapy, including digitoxin, though because of economic distress his use of digoxin was uncertain. He appeared one morning and seemed to be in extremis. Pulmonary edema was present. The patient had severe substernal pain, with radiation to the left arm. These signs and symptoms had been present approximately two hours. On auscultation, a rapid, irregular rhythm was heard. This resembled auricular fibrillation, but on carotid stimulation, a marked slowing with an irregular retreat occurred, with runs of regular rhythm. Auricular flutter with changing block was suspected and confirmed by electrocardiography. The auricular rate was 360. The ventricular response varied from 3:1 to 2:1. At times long runs of the ventricular rate were timed at 180 and were regular. In view of the desperate situation, 0.3 mg. ouabain was given intravenously, and within minutes the ventricular rate slowed to a 3:1 response, or 120. By the time hospitalization was accomplished, the rate had slowed to 100,

pulmonary edema had regressed, and substernal pain had ceased. Thereafter, oral digitalization resulted in a conversion of the rhythm to atrial fibrillation with a ventricular rate of approximately 80.

This was an emergency situation where the speed of action of ouabain made it preferable to that of Cedilanid D because the patient appeared to be moribund. In view of the above-mentioned figures as to time of onset of action of the two drugs, it was our distinct impression that the time gained by giving ouabain was of value to this patient. Within a very short period of time, the patient was sufficiently improved to be moved by ambulance with relative safety. The beneficial effects of ouabain, as have been mentioned above, may persist for several days, and in this patient oral digitalization was sufficient to maintain him in a satisfactory state. The patient has been seen several times since with persistent auricular fibrillation, well-controlled on oral digitoxin.

J. P., an elderly, white male in his seventies, with coronary artery disease, had been under observation for approximately two years. He had had congestive heart failure and stated he had maintained his digitalis regularly. On the day of admission, he suddenly developed substernal pain and extreme dyspnea. When he was seen, dyspnea, orthopnea, and pulmonary edema were present. Auricular fibrillation, which had been well-controlled on oral digitalis previously, was present with a ventricular rate of 150 to 160. The patient was cyanotic and extremely apprehensive. After examining the electrocardiogram to make certain that auricular tachycardia with block (a well-known manifestation of digitalis toxicity)<sup>7</sup> was not present, it was obvious that, in spite of previous digitalis, more was needed. Ouabain, in a dose of 0.2 mg., was administered intravenously. Within minutes the rate had slowed, and in 30 minutes the ventricular rate was 80. The patient had transient vomiting. Pulmonary edema cleared rapidly and the patient was moved to the hospital. Since the time of hospitalization, he has been

maintained on oral digitalis with good control of his auricular fibrillation. It is noteworthy that after the original slowing following the use of ouabain, oral digitoxin was effective.

Once again the speed of action of ouabain was invaluable in relieving an emergency situation within a very short period of time. As stated before, this drug can be administered to previously digitalized patients if due respect is accorded its potency and time of action.

M. S., a 76-year-old, white female, was admitted with pulmonary congestion and auricular fibrillation, the ventricular rate being 140. She had been maintained on digitalis at home and had taken her maintenance dose daily. The day of admission auricular fibrillation developed with a rapid ventricular response and progressive pulmonary edema. She had received digitoxin, 0.2 mg. additional, just before entering the hospital. Cedilanid D, 0.4 mg., was given intravenously immediately. Marked nausea occurred, but no slowing of the ventricular rate was noted. The following day the patient received digitoxin 0.2 mg. orally and 0.8 mg. Cedilanid D intravenously. Nausea and vomiting recurred, and again there was no ventricular slowing. Severe pulmonary congestion was still present. The next morning 1.2 mg. of Cedilanid D was administered intravenously again. The patient became violently nauseated and vomited profusely. At this time auricular fibrillation with ventricular response of 160 to 180 was noted. There was no slowing following Cedilanid D. Pulmonary congestion increased ominously. She became quite cyanotic. When asked to see this patient, the situation appeared to be desperate. Careful investigation of the electrocardiogram revealed no evidence of auricular tachycardia with block. Five hours after the last dose of Cedilanid D, 0.25 mg. of ouabain was given initially intravenously. At half-hourly periods an additional 0.1 mg. was given intravenously for three doses, or a total of 0.55 mg. The rate slowed within

minutes of the first dose, and one-half hour after the last dose, the ventricular rate was 100. Nausea and vomiting again were present. The next morning the ventricular rate was 80, auricular fibrillation still being present. Pulmonary edema had cleared, and except for nausea the patient was tremendously improved. She was controlled thereafter on oral digitalis. She has thus been satisfactorily regulated for well over one year since the time of discharge.

This patient's history again illustrates the value of this rapidly-acting drug in a critical situation. At the time ouabain was given, the patient's ventricular rate had risen to 160 to 180. Pulmonary edema was increasing, and the patient seemed to be almost moribund. Ventricular slowing occurred within minutes of the first dose of ouabain, and in two and one-half hours the patient was in satisfactory control. A dose of 0.55 mg. was necessary to achieve this in spite of previous digitalization. This was accomplished safely by small doses repeated at one-half hour intervals, with electrocardiographic monitoring.

An interesting problem is raised in reviewing this patient's progress. She had been on a full dose of maintenance digitoxin before admission and had had supplementary doses given in addition. Cedilanid D in the dosage given (0.4 mg. the first day, 0.8 mg. the second day, and 1.2 mg. the third day) in addition to 0.4 mg. of digitoxin by mouth was ineffective. No slowing occurred. Instead, extreme nausea and vomiting followed each dose. Whether or not more massive dosage of Cedilanid D would have achieved the desired results can only be speculated. However, one cannot fail to be impressed by the prompt response within minutes to ouabain. Clinical situations such as this give one the impression that there are instances where ouabain is effective when other digitalis compounds have failed. We would emphasize that this is an impression. The attending physicians did not feel inclined to administer more Cedilanid D when the only effect of the

dosage given had been the production of emesis. If the above impression is valid, as may be confirmed by further experience in the use of ouabain in this type of patient, one may postulate that the strophanthidin compounds act differently, either qualitatively from Cedilanid D, or in certain instances, possess a much greater quantitative effect.

B. A., a white male, 44 years of age, was admitted with an acute myocardial infarction. The patient had never had congestive heart failure and had never received digitalis. When this patient was seen in consultation 24 hours after admission, pulmonary edema had developed with great rapidity. Many bubbling rales were heard throughout the chest. The patient was dyspneic, cyanotic, and the heart rate was 140. Sinus tachycardia was present, this being the mechanism by which a damaged myocardium, deprived of its full-stroke volume, attempted to maintain an adequate output. The blood pressure was still maintained satisfactorily at 120/80 mm. Hg. It was obvious that a rapidly-acting digitalis preparation was preferable for the control of his pulmonary edema. It should be noted that pulmonary edema persisted despite the usual ancillary measures. Three-tenths mg. of ouabain was administered intravenously at once, and 0.1 mg. every half-hour for four more doses, a total of 0.7 mg. being given. Within minutes, slowing was apparent, and at the end of the first half-hour the rate had slowed to 90. Pulmonary congestion cleared promptly, and cyanosis was no longer evident. Subsequently, the patient had an uneventful recovery from his myocardial infarction. He was maintained on an oral digitalis preparation with no recurrence of failure. Later digitalis was discontinued with no detrimental results. Since discharge he has done well except for bouts of angina pectoris. At the time of last examination, no evidence of congestive heart failure was present.

In this situation we feel that either Cedilanid D or ouabain would have been effec-

tive. We chose the latter drug because of its more rapid action, and the results were indeed gratifying. It is of interest that, due to an oversight, no further digitalis was given for several days after the ouabain. No evidence of congestive failure reappeared, again confirming the statement made before that the beneficial slowing produced by ouabain may persist for several days, even though the drug itself may be metabolized within 24 hours.

W. S., an elderly white male, presented himself at his family physician's office with pulmonary edema. He, by history, had not been taking digitalis. The patient appeared to be very seriously ill. His physician administered at once 1.6 mg. Cedilanid D intravenously. Oxygen was administered. Meperidine was given in appropriate doses. After approximately two hours the patient was not improved, and pulmonary edema appeared to be progressing. Theophylline-ethylenediamine was given intravenously. Again no improvement followed. The physician consulted us by telephone after having the patient in his office about two and one-half hours. He stated that pulmonary edema was progressing and that in spite of all therapy, the patient appeared to be moribund. The physician was advised to give him 0.1 mg. ouabain intravenously every half-hour until improvement occurred or toxicity became evident. The rhythm was a sinus tachycardia, as confirmed by the electrocardiogram. Three-tenths mg. of ouabain was administered over a period of one hour. Improvement was noted shortly before the second dose. After the third dose, pulmonary edema had disappeared and the patient was resting comfortably. He subsequently recovered and was placed on oral digitalis with good control of his congestive heart failure.

This, again, was an instance when the speed of action of ouabain was extremely important. All other measures had failed to effect improvement. By the time ouabain was administered, the patient had already received 1.6 mg. of Cedilanid D, two and

one-half hours prior. Certainly the peak action of Lanatoside D should have been reached in that period of time. Again, the question arises as to whether more Cedilanid D would have had the same effect as ouabain. This question cannot be answered. We cannot escape the impression, however, that instances such as this give a clue that the strophanthidins may act in some way differently, either qualitatively or quantitatively.

J. C., a 35-year-old, white male, was seen because of the onset of abrupt tachycardia and syncope. The respirations were increased slightly, and the patient complained of dyspnea. The apical rate was 120 and irregular. The electrocardiogram on admission revealed an acute posterior myocardial infarction, auricular fibrillation, with a ventricular response up to 220. Ouabain, 0.5 mg., was given in divided doses with conversion to a normal sinus rhythm two hours after the original dose of ouabain. The rate was satisfactory, and dyspnea disappeared.

This patient again demonstrates the rapid efficacy of ouabain. An acute infarction, with a ventricular rate up to 220, poses serious considerations. The increased work of the damaged myocardium, the decreased coronary flow and decreased diastolic interval are among a few of these. After ouabain, this patient was comfortable in two hours and proceeded to an uneventful convalescence.

### Summary

Ouabain (G-strophanthidin) is a useful and often forgotten drug in emergency situations such as certain rapid arrhythmias, or pulmonary edema where prompt therapy is imperative. It is a potent drug, and an intimate knowledge of the proper dosage, speed, and duration of action is imperative. With due regard to these properties ouabain can be used safely with swift and impressive results in many instances. Lanatoside C and desacetyl Lanatoside C continue to be excellent drugs of choice for rapid digitalization, producing a good clin-

ical response in most situations where a clinical response can be expected. Ouabain has the advantage of a more rapid onset of action and a more rapid peak action. Because of this, digitalization can be accomplished in a shorter period of time. One cannot administer Lanatoside C or desacetyl Lanatoside C safely in increasing dosage, as can be done with ouabain, at less than hourly intervals, therefore prolonging the period of digitalization. One cannot escape the impression that in special situations, such as some of the cases discussed above, this time-saving procedure is beneficial, if not lifesaving. Whether ouabain is superior to Cedilanid D because of any qualitative action or quantitative action is unknown. There are times clinically when one gains this impression. Much more experience is needed to establish this point. Even when it seems to be effective when Cedilanid D is not, the problem always remains that increasing dosage of the latter drug may have been sufficient.

In conclusion, it should be noted that any potent digitalis preparation is capable of producing toxicity and fatalities. A thorough knowledge of the characteristics of any digitalis preparation should be mastered

by the practicing physician. This thorough knowledge is also of greatest urgency in using rapid-acting preparations where fatalities must occur unless the characteristics of the drug are quite familiar to the physician in charge. Most digitalization can be accomplished orally and relatively slowly, minimizing the danger of toxicity. Except in unusual situations, intravenous digitalis should be reserved for emergency situations.

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# Mental Health . . .

HENRY B. ADAMS, Ph.D.  
Richmond, Virginia

## **Is Mental Illness on the Increase?**

It is well established that rates of admission to mental hospitals in the United States have risen steadily in recent decades.<sup>1</sup> Some have viewed this rise as indicating an alarming increase in the incidence of mental illness.

However, it is also a fact that rates of admission to public mental institutions show surprisingly large differences from state to state. These differences pose serious questions for anyone interpreting admission statistics as an index of the "true" incidence of mental illness in society.

Are such interpretations valid? Apparently many authorities think so. One study states that "the rate of first admissions to long-term mental hospitals has long been used as an index of the incidence of the more serious mental disorders,"<sup>1</sup> and that an extensive literature has been published on this topic, particularly admissions to state hospitals.

A recent review<sup>2</sup> of published definitions of mental health and mental illness lists six kinds of definitions of mental illness that have appeared in the literature. These include (1) exposure to psychiatric treatment, (2) social maladjustment, (3) psychiatric diagnosis, (4) subjective unhappiness, (5) objective psychological symptoms, and (6) failure of positive adaptation. It was observed that "the most frequently used operational definition of mental illness, at least in terms of the number of studies employing it, is simply the fact of a person's being

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under psychiatric treatment. And this definition is usually restricted to hospital treatment rather than out-patient service."<sup>2</sup>

Since so many authorities do interpret hospital admission statistics as measures of the "true" incidence of mental illness, statistics on admissions to public mental institutions were systematically analyzed in order to clarify the interpretations which could legitimately be made. This analysis included (1) the consistency of admission rates from year to year, (2) the range of differences between states, (3) relationships between admission rates, rates of discharge, and other indices of patient movement in hospitals, (4) the influence of sociological factors, (5) the effects of the tranquilizing drugs on admissions and discharges, and (6) a comparison of patient-movement rates in various types of mental institutions.

## **Data and Results**

Published data from various official sources were statistically analyzed.<sup>3,4,5,6,7,8</sup> The results are summarized below.

*Consistency of Admission Rates.* An important fact which has received surprisingly little comment is the remarkable consistency of admission rates from year to year. During the years 1950 to 1955 the nation-wide admission rate for the highest year was only some 5% greater than that of the lowest.

Furthermore, first admission and readmission rates were found to be very closely associated. Thus, any factor that raises first admission rates also raises the readmission rates by proportionately the same degree. If first admission and readmission rates are added together to get total admission rates, the figures on first admissions correlate almost perfectly with the total admission rate. Since the states define "first admis-

sions" and "readmissions" in several different ways, the statistical analysis was based on total admissions.

Although admission figures for the country as a whole remain relatively constant from year to year, individual states could show wide variations from year to year that cancel one another out in nation-wide totals. This possibility was investigated by correlating admission rates for individual states for successive years during the 1950-1955 period. It was found that figures for individual states remained fairly consistent and that their rates of admission did not fluctuate widely during this period.

rarely-discussed fact is the wide range of variation between states. The average annual admission rate during the 1950-1955 period in Florida, the lowest ranking state, was only one-fourth the rate for New Hampshire, the top ranking state. While figures on admissions have long been interpreted as measures of the incidence of the more serious mental disorders, comparisons between specific states raise questions about all such interpretations. Is the "true" incidence of mental illness in New Hampshire actually four times as great as in Florida?

If other measures of patient movement are considered we find an even greater range

TABLE 1  
RANGE OF VARIATION BETWEEN STATES\* ON FOUR INDICES OF PATIENT MOVEMENT  
IN PUBLIC PROLONGED-CARE MENTAL HOSPITALS FOR THE YEAR 1951

INDICES†	Highest State	Lowest State	Median	Mean	S.D.
Admissions 100,000 Population	189.2 (R.I.)	37.7 (Kan.)	90.0	92.7	38.3
Discharges 100,000 Population	121.2 (Ariz.)	21.2 (Fla.)	58.3	64.7	29.0
Deaths in Hospitals 100,000 Population	62.3 (N.H.)	8.3 (N.M.)	24.5	26.1	11.8
Resident Patients 100,000 Population	879.4 (D.C.)	162.6 (N.M.)	305.3	319.2	119.9

\*Includes the District of Columbia but not Alaska or Hawaii.

†Description of Indices:

*Admissions per 100,000 Population.* The total number of patients admitted (including both first admissions and readmissions but excluding transfers) during the year 1951 to public (state, county, and city) hospitals for the prolonged-care of mentally ill per 100,000 civilian population for the respective states estimated as of July 1, 1951.

*Discharges per 100,000 Population.* Number of patients discharged in 1951 from public prolonged-care mental hospitals per 100,000 civilian population.

*Deaths in Hospitals per 100,000 Population.* Number of persons who died in 1951 while resident patients in public prolonged-care mental hospitals, per 100,000 civilian population.

*Resident Patients per 100,000 Population.* Number of average daily resident patients in public prolonged-care mental hospitals during the year 1951 per 100,000 civilian population.

SOURCE: *Mental Health Statistics, Current Reports.*<sup>3</sup>

While it is true that admissions to public mental hospitals have risen steadily since 1900, this trend seems relatively unresponsive to short-term or year-to-year fluctuations. The factors producing this steady long-term increase seem to have been slow, gradual, and cumulative in their effects. It is rare to find sudden, abrupt changes from year to year in individual states. Comparative stability of admission rates is the rule.

*Variations Between States.* A second

of variation. Table 1 shows figures on total admissions, discharges, deaths in hospitals, and resident patients per 100,000 population for one selected year. On each index the figure for the highest ranking state was many times that of the lowest. And these wide differences tend to perpetuate themselves from year to year. They reflect a variety of established social, legal, and administrative practices, which vary from state to state. In practice each state hospital sys-

tem functions as a self-contained administrative entity, consistently following its own established policies and procedures, which may be quite different from those of neighboring states.

*Inter-relationships Between Patient Movement Indices.* A third phase of the analysis showed that rates of admissions, discharges, deaths in hospitals, and resident patients were closely interrelated, the degree of relationship being quite high. One would expect a close relationship between admission rates and death and discharge rates, since deaths and discharges of previously hospitalized patients release space for new admissions. The relationship of admission and resident patient rates requires a little more explanation. Most public mental hospitals are kept filled most of the time, many having long waiting lists. Since vacant beds are rare, the number of hospitalized resident patients closely approximates the number of hospital beds available. (Official census figures on beds in public mental hospitals were not available.) Thus there was a substantial relationship between resident patient and total admission rates.

The results indicated that states with the highest admission rates tended to have the highest discharge rates, the highest relative frequency of deaths in hospitals, and the highest resident patient or hospitalization rates. Analysis of the joint relationship of admission rates to the other three indices by means of multiple correlation revealed that about 90% of the variance could be explained by the other three factors. In other words, differences between states in rates of admissions are almost entirely explained by (1) the number of hospital beds available and (2) the rate at which deaths and discharges release beds for new admissions. Any factor which raises discharge or death rates would thereby increase the number of new admissions.

*Admission Rates and Social Factors.* Many writers have suggested that certain social factors contribute to the incidence of mental illness or to the availability of hospital

facilities for those needing treatment. Three factors most often mentioned, income, urbanization, and percentages of the population aged 65 and over, were selected for detailed study.

The income factor was selected on grounds that wealthier states would have more funds for mental hospitals as well as all other public services. States with higher per capita incomes should thus have higher admission rates, other factors being equal. The influence of urbanization was investigated because of the widespread belief that urban society is inherently more stressful and hence more likely to induce mental disorders than rural society. If this belief is correct, the more urbanized states should have the highest hospital admission rates, after the effects of other relevant variables are ruled out. Age was studied because rates of admission for the nation as a whole are highest in the oldest age groups. Consequently, admission rates should be higher in the states with greater percentages of population aged 65 and over.

The results at first seemed to support all three propositions. Admission rates were positively related to all three variables, but the degree of relationship was not very high. Correlations of admission rates with income and urbanization were barely significant, and the correlation with the age variable was too small to be statistically significant. Furthermore, urbanization and per capita income were found to be closely associated, the most urbanized states having the most wealth. When differences between states in income were held constant by means of partial correlation, the net relationship between urbanization and mental hospital admission rates dropped to nearly zero. It may be concluded that differences between states in rates of admission to public psychiatric institutions reflect financial resources rather than urbanization. These results were consistent with another recent study<sup>9</sup> which showed that urban life is not more conducive to mental illness than rural life and that hospitalization rates in urbanized areas are

no higher than in rural areas. The belief that city life is psychologically more stressful than life in the country is not borne out by the facts.

While the percentage of the population aged 65 and over in each state was positively correlated with the total admission rate, the degree of relationship was too low to be statistically significant. This finding was surprising, since rates of hospitalization for the nation as a whole are much higher in the elderly than in younger age groups. But this age factor accounts for little of the variation between states.

*Changes Following Introduction of Tranquilizing Drugs.* Any factor which increases deaths or discharges thereby tends to raise admission rates. These relationships are neatly illustrated by comparisons before and after the appearance of tranquilizing drugs, which occurred between 1950 and 1955.

Table 2 shows that the tranquilizers had significant effects. The upper half of Table 2 indicates that admissions, discharges, deaths in hospitals, and resident patients all increased from 1950 to 1955. The number of discharges in 1955 rose 31%, presumably reflecting the efficacy of the new drugs.

TABLE 2  
CHANGES IN PATIENT MOVEMENT IN PUBLIC PROLONGED-CARE MENTAL HOSPITALS  
IN THE UNITED STATES 1950 TO 1955

YEAR	Number of Admissions	Number of Discharges	Deaths in Hospitals	Resident Patients
1950	146,194	87,659	41,215	505,419
1955	173,864	115,930	44,280	554,592
Change	+27,670	+28,271	+3,065	+49,173
Percentage Change	+ 18.9	+ 31.0	+ 7.4	+ 9.7

#### RATES PER 100,000 POPULATION AS OF THE YEARS 1950 AND 1955

YEAR	Admissions	Discharges	Deaths	Patients
1950	97.3	58.3	27.4	336.4
1955	107.1	71.4	27.3	341.8
Change	+ 9.8	+13.1	-0.1	+ 5.4
Percentage Change	+10.1	+22.5	-0.4	+ 1.6

SOURCES: References 3 and 5.

When the joint effects of all three social factors on hospital admission rates were evaluated by multiple correlation, the overall relationship was barely significant. These three factors accounted for about 16% of the variance, whereas the combination of discharge, death and resident patient rates accounted for about 90% of the variance in admission rates. (There were some overlapping effects.) Differences between states in admission rates thus seem largely a function of differences in administrative policies rather than sociological characteristics of the states themselves.

But the population of the country also increased from 1950 to 1955. When this fact is taken into account a different picture emerges, as shown in the lower half of Table 2. Deaths in hospitals and resident patients per 100,000 population remained essentially unchanged, whereas rates of admissions and discharges rose 10.1% and 22.5% respectively. It is noteworthy that the numerical increase in discharges was almost identical with the increase in admissions, both figures being about 28,000. These figures demonstrate the close relationship of admissions and discharges. If it is legitimate to attribute

the increase in discharges to the tranquilizers, it would be just as legitimate to state that the increase in admission rates was also due to the tranquilizers, at least indirectly.

This example demonstrates how increased admission rates may reflect better treatment procedures. New methods which hasten the recovery and discharge of previously admitted patients make it possible for more individuals to be treated with the same facilities. But no one would seriously assert that improved treatment methods actually raise the "true" incidence of mental illness, even if they do result in higher admission rates. The fallacy of interpreting the number of persons admitted and thereby exposed to hospital treatment as a measure of the

Comparisons with veterans and private hospitals bring out some notable differences. Veterans hospitals had only 8.7% of resident patients but 17% of the admissions. The private hospitals had only 2.4% of the resident patients but 25.1% of the admissions.

These figures suggest two important conclusions. The first is that estimates of the nature and extent of mental illness based exclusively on state hospitals have much room for error, since they account for scarcely half the total number of admissions to all prolonged-care institutions. (These figures do not include temporary care or intensive treatment hospitals, nor do they take into account out-patient services.) A second is that the ratio of admissions to resi-

TABLE 3  
ADMISSIONS DURING THE YEAR AND RESIDENT PATIENTS IN PROLONGED-CARE  
MENTAL HOSPITALS OF VARIOUS TYPES AT THE END OF THE YEAR 1951

TYPE OF HOSPITAL	ADMISSIONS		RESIDENT PATIENTS	
	Number	Per Cent	Number	Per Cent
State Hospitals	141,583	55.8	497,013	85.0
County and City Hospitals	4,893	1.9	22,525	3.9
Veterans' Hospitals	43,540	17.2	50,624	8.7
Private Hospitals	63,743	25.1	14,293	2.4
Totals	253,759	100.0	584,455	100.0

SOURCE: *Patients in Mental Institutions, 1950 and 1951*.<sup>4</sup> Tables C and D, pp. 20-21.

incidence of mental illness is clearly pointed up in this example.

*Admissions and Patients in Various Types of Hospitals.* Since admissions to state hospitals have come in for the most extensive study in the published literature, it seems pertinent to compare these institutions with other types of prolonged-care mental hospitals. Table 3 shows that in a recent year state hospitals accounted for 85% of the resident patients in all hospitals reporting that year. County and city hospitals, tabulated in the totals for public mental hospitals accounted for an additional 3.9%. This group of institutions had 88.9% of the resident patients but only 57.1% of the admissions.

dent patients can be a meaningful index of general rates of turnover. Figures in Table 3 show a ratio of .28 for the state, city, and county hospitals, compared with .86 for veterans hospitals and 4.46 for private hospitals. It is clear that turnover rates are much lower for the first group of institutions than for veterans or private hospitals. The comparison between veterans hospitals and the state, county, and city institutions is particularly pertinent, since a statistical breakdown by age and diagnosis revealed that the median ages and diagnostic composition of male resident psychiatric patients were quite similar in the two types of institutions.<sup>4</sup> Differences in turnover between veterans hospitals and state institutions can-

not be attributed to differences in the age and diagnostic characteristics of the patients themselves. If the state, county and city institutions had been able to admit and discharge patients during the year 1951 at the same rate as the veterans hospitals, they could have taken in 447,000 patients with the same physical facilities instead of the 146,476 actually admitted.

### Conclusions

The results show more clearly just what is reflected in admission figures from public mental hospitals. These statistics are measures of incoming traffic in a selected group of institutions, which account for only a fraction of all patients exposed to psychiatric treatment. There has been a tendency to make unwarranted interpretations, with premature generalizations about the incidence of mental disorders in society. But the fact is that admission rates in individual states tend to remain relatively stable from year to year, even though rates for adjoining states may differ enormously. These differences apparently reflect varying administrative policies covering admission and discharge practices.

Many discussions of the increase in hospitalization rates in contemporary society seem motivated by a desire to make broad inferences about the social implications of these data. But it seems doubtful that incoming traffic in selected institutions constitutes a satisfactory or valid index of the occurrence of mental illnesses in the general population.

While rates of admission to mental hospitals in this country have slowly but steadily increased since 1900, many other variables positively associated with hospital admission rates have also increased. Per capita incomes have risen, providing more funds for the construction and operation of hospital facilities. The number of mental hospital beds per capita has risen, new treatment methods have been developed, and the average hospital stay has been shortened. Medical advances have increased the average life expectancy

and the proportion of individuals surviving into the higher age brackets where the incidence of mental disorders, like other infirmities associated with aging, reaches a maximum. All these changes would tend to raise rates of admission to mental hospitals even though the "true" incidence of mental illnesses for each age group of the general population has remained constant.

But there is a more fundamental difficulty in determining the "true" incidence of mental disorders. The definitions of those two much-used terms, "mental illness" and "mental health," are still in doubt. The concept of a "mental illness" is an analogy drawn from physical medicine, not a behavioral concept. Yet the final report to Congress by the Joint Commission on Mental Illness and Health<sup>10</sup> observes that most persons hospitalized for mental illness are institutionalized because of their *interpersonal behavior*. Their actions offend and disturb other people to the extent of provoking rejection, thereby resulting in hospitalization. Thus the term "mental illness" refers to a maladaptive, faulty, socially disapproved pattern of personal conduct, not to bodily illnesses of the types which are the traditional concerns of medical education and practice. In recent years there has come to be a greater appreciation of this fact, not only on the part of psychiatrists and psychologists, but by the medical profession as a whole.<sup>10,11</sup> The fundamental concepts of "mental illness" and "mental health" are today coming under searching scrutiny. "Mental illness" is not just like any physical illness. It is doubtful that this term can ever be used in any meaningful sense to describe the manifold varieties of psychotic, neurotic, criminal, delinquent, or socially disapproved conduct now indiscriminately lumped together under one single all-inclusive wastebasket label. Until the essential properties of the many different kinds of conduct labelled "mental illnesses" are spelled out meaningfully and in detail, attempts to measure the frequency of behavioral disorders in the general population are doomed to failure.

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### Heart Attack Before Birth

The extremely rare occurrence of a heart attack in an infant before birth has been reported by James F. Clapp III, A.B., and Richard L. Naeye, M.D., Burlington, Vt.

Writing in the December 9th Journal of the American Medical Association, the authors said the infant suffered the heart attack "well before the onset of labor."

The child, a 7-pound, 10-ounce girl, died 52 hours after birth but not of the heart attack. Death was attributed to an imperfection of the left side of the heart. The

heart attack involved a nonfunctional part of the heart muscle.

The only complication of the pregnancy was a weight gain of 36 pounds by the 24-year-old mother.

There have been several reports of heart attacks in newborn infants, but there has been only one previous case of a heart attack before birth in medical literature.

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# Public Health . . .

MACK I. SHANHOLTZ, M.D.  
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## **Venereal Disease—A Critical Issue**

The year 1955 marked the end of an eight-year decline of early syphilis. By 1958 reported cases were reflecting an increase in early syphilis from all areas of the nation and among all social groups.

For physicians and the lay public alike this was a rude awakening. The belief in that magic word "penicillin" had blinded everyone to the fact that it would take more than a "miracle drug" to control this disease and keep it controlled. An almost tragic deemphasis of the epidemiology of syphilis, from the classroom of the medical college to the office of the private physician, to the department of public health had occurred. In addition, sensitivity to penicillin itself was beginning to show and the medical sciences were impelled to intensify the search for adequate alternate antibiotics.

## **VD in Virginia**

During this period of complacency the national rates were falling year by year. In Virginia, where the program of case finding was continued energetically, a different trend took place. The syphilis rate in Virginia reached its peak in 1941 when 687 cases were reported per 100,000 population. The rate in Virginia dropped consistently then as in the nation until 1950, when it reached the low of 147 per 100,000 population.

However, rather than dropping the case finding program on the assumption that the problem was about to be solved, more vigorous efforts were made to find infections. The result is reflected in a continuing *increase* in reported early syphilis rates from 1951 to date.

In addition to the increase in reported

early syphilis, there are over 3,000 people with other stages of syphilis and almost 7,000 people who reported contacting gonorrhea in 1961. Truly, the magnitude of the VD problem in this State is at once apparent and appalling.

## **Teen-Age VD**

Morbidity reports reveal a new trend in the cases of infectious VD. Annually from 1951 to date, an increasingly large percentage of the total gonorrhea and primary and secondary syphilis cases reported in Virginia have come from the age group 10-19. In 1961 alone, there were 1,778 teenagers who were reported as having infectious VD, or an average of five young people each day contracting these diseases.

An example of the problem being faced is an epidemic now in progress in one particular area of Virginia. It involves almost three hundred people who have been exposed to infectious syphilis—and through the efforts of local physicians and health department epidemiologists, some forty cases of syphilis have been brought under treatment. The original case discovered by a family physician was a *16-year-old girl!* The overwhelming majority of the people involved were teenagers and the sex contacts extended into several states and every large city in Virginia.

## **Reasons for Increase**

A statement issued by the Association of State and Territorial Health Officers, the American Venereal Disease Association and the American Social Hygiene Association following an investigation by these organizations into today's VD problem, attributes the dramatic increase in VD infections to:

- 1) Increase in population, particularly among the transient population.
- 2) The lag in VD program activity in the early fifties that gave the disease a chance to renew its foothold.
- 3) Underreporting of syphilis.
- 4) Lack of public education about VD since the war, particularly in the schools.
- 5) Physicians untrained to recognize symptoms allowing syphilis to go untreated.
- 6) Increase in promiscuous sex behavior.
- 7) Overall lowering of moral standards in our society.
- 8) Health officials generally not aware of changing characteristics of the disease.
- 9) Lack of discipline in the home.
- 10) More freedom among young people, particularly as afforded by the automobile.
- 11) Tendency in clinics to treat the disease rather than the whole patient.

### **Venereal Disease Control in Virginia**

In the face of the threat from resurgent VD, the control program in Virginia is being strengthened: The objectives of this program are to:

- 1) Find and treat every case of venereal disease in the State.
- 2) Search out all venereal disease contacts and bring them to examination and treatment, if necessary.
- 3) Disseminate information to the physicians as to the latest and most accepted methods of treatment, and encourage cooperation between physicians and local health authorities in case finding.
- 4) Educate the general public as to the cause and dangers of venereal disease, thus raising their "index of suspicion".
- 5) Assist in the effective enforcement of the premarital and pre-natal examination laws.
- 6) Furnish free drugs, when needed, for treatment of reported cases.

Obviously this is not a program for the health department alone. Increased participation and cooperation by everyone con-

nected with it is needed if each of the objectives are to be achieved.

### **A Job for Everyone**

Venereal disease control through treatment, contact investigation, and interviews, falls, of course, on the shoulders of professional people and groups, such as physicians, clinics, and health departments. Physicians throughout the State are leading the attack on VD by treating cases and asking health department epidemiologists to interview infected persons to find the source of the disease. This combination of disciplines is the most effective method of VD control and prevention.

If you suspect a sore or rash to be syphilitic, ask your health department for a dark-field test to be performed and to do a serologic test for syphilis. Call the health department for an epidemiologist to interview each person with infectious syphilis. In this way an epidemic such as the one described can be prevented.

Your fight against this disease can extend "after hours" also. The second important phase of control—education—lies within the scope and responsibility of the home, school and church, as well as other community groups interested in the health of our young people. As a physician-member of the community and its organizations your influence can be valuable in assisting other people in their battle against VD.

Both private and public health physicians must come to recognize and discharge their individual and joint responsibilities — the private physician because circumstances are bringing an ever-increasing proportion of infected patients to his door, the public health physician because he can render the tedious and time-consuming service to epidemiology which cannot be expected of the physician in private practice. Together, these two can make an invincible team capable of the action required for the final eradication of syphilis from Virginia.

## Communication and Understanding

AS THE FRONTIERS of medical learning are forever being pushed back, the difficulties of communication and understanding among its practitioners are forever increasing. This subject, so ably explored with abounding homespun wisdom and pith by Dell,<sup>1</sup> is as old as the hills and at the same time fresh as the zephyr in spring, especially when applied to radiology. The radiologist has suffered from the lack of communication and understanding by his colleagues probably from the minute the roentgenologic examination ceased being a stunning laboratory trick and became an accepted, everyday procedure entrusted into hands not primarily responsible for the care of the patient.

The failure to appreciate that the radiologic examination is *not* a laboratory function is basic to this lack of interdepartmental communication and understanding. The erythrocyte count is *done*; the intravenous urogram is *conducted*. The former examination is undeviating; the latter is led (hence conducted, *ducere*) through any number of potentially productive routes that may be suggested during its course. The one has succumbed to the wizardry of electronic circuitry; the other never will.

How shocking, then, the statement, to this writer, of a researcher of world-renown, wise in the ways of the viruses, that the radiologist should approach his films armed with no clinical information, so as to make his readings completely objective. It is the least worry of a clinician that a capable radiologist will fall into the trap of reading the clinical picture into his roentgenograms, so fast has his training woven into his professional fabric the concept of objectivity; indeed, almost with a perversity, will he try to read the clinical picture *out* from the roentgenograms, so entrenched within him is the philosophy embodied in Dr. Vincent Archer's maxim: "What might it be besides what I think it is?"

Are the interests of the patient best served when a simple "skull" is requested when trauma has occurred to the skeleton of the face, which is comprised of fourteen bones, including the nose and mandible; when bleeding from the external canal of the ear suggests that attention be directed to the base; when unilateral deafness and tinnitus suggest a lesion in the cerebello-pontine region; when simple optic atrophy suggests a lesion in the optic nerve tract?

Are the interests of the patient best served when a simple "gastro-intestinal series" is requested when dysphagia is a prominent symptom; when there is passage of red blood by mouth or by rectum; or when jaundice is present?

These examples may be continued almost without end. The examination must be *conducted* with clinical facts in mind. It is neither practically, nor medically, nor economically possible to conduct a radiologic examination with the end of demonstrating every possible affliction. It must be selective. Nor is it possible, obviously, for the radiologist to secure all the pertinent clinical data necessary for the most expeditious conduct of the examination in his brief moments of encounter with the patient; he *must* depend upon the clinician.

Justly, the attending physician sees that his hospitalized patient is physically comfortable; that his patient's treatment is properly administered; that his patient's spirits are as good as possible; it is equally important that the referring physician play an active role by communication and understanding in the execution of that vital medical modality, radiology, which consumes a good portion of his patient's medical dollar.

CHRISTIAN V. CIMMINO, M.D.

1. Dell, J. M., Jr.: Communication and Understanding. *South. Med. J.* 54:753-756, 1961.

## *Society Activities . . .*

### **Accomack.**

At the regular meeting of this Society on December 19th, Dr. J. Thomas Edmonds, Accomac, was named president; Dr. Richard Wingfield, Keller, vice-president; and Dr. William Fritz, Accomac, secretary.

### **Fourth District.**

The annual meeting of the Fourth District Medical Society was held in Petersburg on December 5th. Guest speakers were Dr. Guy Garrison, Dr. Henry Wilson and Dr. Albert Wasserman of Richmond.

Officers for 1962 are: President, Dr. Eppes Harris; vice-presidents, Drs. J. B. Adams and Norris Rosenberg; secretary-treasurer, Dr. D. B. Drewry; and chairman of the steering committee, Dr. W. S. Sloan.

### **Fredericksburg.**

Officers for the Fredericksburg Medical Society are: President, Dr. James G. Willis; vice-president, Dr. D. W. Scott; and secretary-treasurer, Dr. C. J. Robbins, III.

### **Mid-Tidewater.**

The Mid-Tidewater Medical Society has named the following officers for 1962: President, Dr. Edward Kearney, Mathews; president-elect, Dr. Douglas E. Andrews, Tappahannock; vice-president, Dr. William B. Brown, Gloucester; secretary, Dr. M. H. Harris, West Point; and treasurer, Dr. W. H. Hosfield, West Point.

### **Patrick-Henry.**

The Patrick-Henry Medical Society has elected Dr. Bate C. Toms, Jr., Martinsville, as president; Dr. L. A. Faudree, Bassett, vice-president; and Dr. George P. Scouras, Martinsville, secretary-treasurer.

### **Princess Anne.**

Officers for the Princess Anne County Medical Society for 1962 are: Dr. James Charlton, president; Dr. Arthur B. Frazier, vice-president and president-elect; and Dr. H. E. Sturgeon, secretary-treasurer.

### **Richmond Academy of General Practice.**

At the annual meeting of the Academy in December, Dr. William C. Gill, Jr., succeeded Dr. George G. Ritchie, Jr., to the presidency. Dr. Reuben F. Simms was named president-elect; Dr. Irwin Rifkin, vice-president; Dr. Frederick H. Savage, secretary; and Dr. William M. Robinson, treasurer. Dr. Fleming W. Gill and Dr. Aubrey A. Houser, Jr., were elected as two new members of the board of trustees.

### **The American Association for Study of Headaches**

Will hold its annual meeting at the Palmer House in Chicago on June 23rd. Dr. Bayard T. Horton, Rochester, Minnesota, is president.

Further information may be obtained from Dr. Lester S. Blumenthal, 5315 Connecticut Avenue, Northwest, Washington 15, D. C.

# News....

## **New Members.**

Since the list published in the January issue of the Monthly, the following new members have been admitted into The Medical Society of Virginia:

Larry William Berman, M.D., Norfolk  
William Draper Byrne, M.D., Annandale  
Rees Cecil Chapman, M.D., Norfolk  
Luigi de Alessandrini, M.D., Norfolk  
Robert Sherman Engler, M.D.,  
Falls Church  
Cloud Darrel Green, M.D., Charlottesville  
Edward B. MacMahon, M.D., Annandale  
Ronald Edward Miller, M.D., Hopewell  
Robert Barksdale Ooghe, M.D.,  
Charlottesville  
Alfred Morton Schulwolf, M.D., Norfolk  
Ira Seiler, M.D., Springfield  
Franklin Vaughan Tweedy, M.D.,  
Lynchburg  
Robert Edward Ware, M.D., Arlington

## **Flying Physicians Association.**

At a meeting of some twenty "flying doctors" held at Pulaski on December 3rd, the Virginia Chapter was organized. All physicians who join this Association own their own aircraft which is specially fitted out with medical equipment so it will be ready for immediate use should disaster strike anywhere in the United States.

Dr. Fredric Delp, Pulaski, was named chairman; Dr. Luther Brawner, Richmond, co-chairman; and Dr. William McGuire, Pulaski, secretary-treasurer.

## **Dr. Blanton's Library Presented to University.**

The collection of books and manuscripts

of the late Dr. Wyndham B. Blanton has been presented to the Alderman Library of the University of Virginia. This was a gift of Mrs. Blanton and their four children. The collection consists of 9,123 books and manuscripts largely concerning the history of medicine.

## **Dr. David W. Richardson**

Has been named the first occupant of the new chair of cardiovascular research at the Medical College of Virginia and assumed this position on January 1st. He was recently associate chief of staff for research at McGuire Veterans' Administration Hospital and assistant professor of medicine at the College. He has been named associate professor of medicine. At least three-fourths of Dr. Richardson's time will be devoted to research of his choosing in the cardiovascular field, and the remainder may be used in teaching, administrative or clinical duties.

The Virginia Heart Association and Chapters have allocated a total of \$40,000 for salary, equipment and supplies for the initial two-year period. The College will contribute a minimum of \$5,000 a year.

## **Board of Medical Examiners.**

The next meeting of the Reciprocity Committee of the Board of Medical Examiners will be held on June 11th, followed by the Board meeting on the same date. The examinations will be on June 12th to 15th. These will be held at the John Marshall Hotel, Richmond.

## **Hospital Staff.**

Officers of the Mary Washington Hos-

pital Staff, Fredericksburg, are: President, Dr. T. Stacy Lloyd; vice-president, Dr. William D. Liddle; secretary-treasurer, Dr. James E. Grimes. Dr. James G. Willis was named chief of the medical service; Dr. J. Richmond Low, chief of surgical service; Dr. Gordon Jones, chief of obstetrics; and Dr. W. D. Liddle, chief of pediatrics.

### Cumulated Index Medicus.

A set of the Cumulated Index Medicus for 1960 has been presented to the Richmond Public Library by the American Medical Association. It is now available for use in the Reference Department of the Main Library at First and Franklin Streets.

125,000 articles from several hundred professional journals are listed in the publication. While the Library subscribes to only a few of the journals, many of them are in the Medical College of Virginia Library.

The Index will remain in the Reference Department for one year. If it is useful to professional people in Richmond, an attempt will be made to add issues of future years, as they are published.

### King's Daughters Hospital.

Dr. William E. Harman, Staunton, is the new president of the medical staff of this hospital.

### Heart Symposium.

The third annual heart symposium on medical and surgical cardiovascular disease, sponsored by The Tidewater Heart Association, will be held at the Golden Triangle Motor Hotel, Norfolk, on March 14th. Guest speakers include Dr. Ruth Pick, assistant director, Cardiovascular Department of the Michael Reese Hospital and Established Investigator of the American Heart Association, who will speak on Clinical Application of Research Related to Atherosclerosis; Dr. John H. Moyer, Professor of

Medicine of Hahneman Medical College, his subject being Present Day Management of Hypertension; Dr. Benjamin A. Gasul, Professor of Pediatrics of the University of Illinois, College of Medicine, whose subject will be Indications for Surgery in Congenital Heart Disease; Dr. Dwight E. Harken, Associate Clinical Professor of Surgery, Harvard Medical School, on The Physician Looks at the Surgery of Acquired Heart Disease; and Dr. Henry T. Bahnsen, Professor of Surgery, Johns Hopkins University, who will talk on Advances in Surgery on Congenital Heart Disease. There will be panel discussions following these talks.

Five hours credit, category I, has been authorized by the Virginia Academy of General Practice.

### Annual Clinical Conference.

The annual clinical conference of the Louise Obici Memorial Hospital, Suffolk, in conjunction with the Virginia Division of the American Cancer Society, will be held on March 7th. The program will be on Current Diagnostic and Management Problems in the Cancer Patient. The following will be speakers: Dr. Felix Wrblewski, Department of Medicine, Memorial Hospital, New York City; Dr. Richard Brasfield, Department of Surgery, Memorial Hospital; Dr. James Nickson, Department of Radiation Therapy, Memorial Hospital; Dr. Calvin Klopp, Department of Surgery, George Washington University, Washington; Dr. Wayne Rundles, Department of Medicine, Duke University, Durham; and Colonel Joseph M. Blumberg, Deputy Director, Armed Forces Institute of Pathology, Washington.

Further information may be obtained from Dr. George J. Carroll, Chairman of the Program Committee, Louise Obici Memorial Hospital, Suffolk.

### Medical Officer Wanted.

A vacancy for Medical Officer (Occupa-

tional Health and Medicine) exists at the DeWitt Army Hospital, Fort Belvoir, Virginia. The incumbent of the position will serve as Director of the Civilian Employee Health Program and will be responsible for the planning, development, testing, and supervising of Occupational Health units of the U. S. Army Engineer Center and the Engineer Research and Development Laboratories.

Applicants for this position must be graduates of an accredited medical school with the degree of Doctor of Medicine and must be currently licensed to practice medicine and surgery in a State or Territory of the United States.

Inquiries should be addressed to Mr. Payne, Chief, Recruiting Branch, Civilian Personnel Office, Ft. Belvoir, Virginia.

#### Situation Wanted.

EENT man desires permanent association with an ophthalmologist or otolaryngologist, or a location where an EENT man is needed. Reply to Box S-5, care Virginia Medical Monthly, 4205 Dover Road, Richmond, Virginia. (Adv.)

#### Wanted.

Roentgenologist needed for group practice in Southwestern Virginia. Answer #25, care Virginia Medical Monthly, 4205 Dover Road, Richmond, Virginia. (Adv.)

#### Wanted.

Obstetrical-gynecological man for group practice. Board eligible or certified. To head department. Southwestern Virginia. Reply to #20, care Virginia Medical Monthly, 4205 Dover Road, Richmond, Virginia. (Adv.)

#### Opportunities Available in Virginia

For physicians as Directors of Local Health Departments. Salary range \$12,000 to \$15,675. Entrance salary dependent upon qualifications. Inservice training and post-graduate study opportunity available. Applicants must be American citizens, under 48 and eligible for Virginia licensure; liberal sick leave, vacation, group life insurance and retirement benefits. Write: Director of Local Health Services, Virginia State Department of Health, Richmond 19, Virginia. (Adv.)

# *Current Currents*

KING-ANDERSON: Congress is back in session and the Administration, fully aware that the House Ways and Means Committee has given no indication that it will report H. R. 4222, is nevertheless giving the bill "highest" legislation priority. The strategy is to pressure the bill, or a compromise measure, out of committee and on to the floor. Should this fail, it is believed that efforts will be made to use the "back door" approach—tacking an aged care bill to a House passed measure in the Senate.

In preparation for an all-out push to enact H. R. 4222, the Department of Health, Education and Welfare has set up a task force to assemble facts, figures and ideas for the legislative fight. Creation of the task force was reported on December 27 by HEW Assistant Secretary, Wilbur J. Cohen. Cohen also praised the National Council of Senior Citizens for Medical Care for doing an outstanding job of campaigning for passage of H. R. 4222. Although the Executive Secretary of the Council was until a few months ago a member of the HEW staff, and Amie Forand, head of the Council, was national chairman of the Senior Citizens for Kennedy during the presidential campaign, backers of the Council insist it is not operating as an unofficial arm of the Administration!

The AFL-CIO, as in the past, is actively urging passage of H. R. 4222. In a recent Chicago speech, AFL-CIO President, George Meany, said that enactment of the King-Anderson bill was a prime legislative goal.

KEOGH BILL: H. R. 10, which would permit professional people to participate in tax-deferred pension plans, is expected to come up for a vote in the Senate for the first time in the long ten year history of this legislation. It has passed the House three times and a modified version was approved by the Senate Finance Committee last August 25.

GENERAL ASSEMBLY: As this issues goes to press, word has just been received that legislation designed to enable Virginia to implement provisions of the Kerr-Mills law has been introduced in the General Assembly. Physicians should make sure that their representatives are contacted and urged to seek its enactment.

DID YOU KNOW? Among 1900 physicians given chest x-rays during the recent session of the American Medical Association, 5.3 per cent had suspected tuberculosis, 6.1 per cent had other lung abnormalities, 6.7 per cent had cardiovascular abnormalities.

AMA-ERF: The American Medical Education Foundation and the American Medical Research Foundation have been consolidated into a single organization—the American

Medical Education and Research Foundation. Their programs will be expanded and a concerted effort made to provide increased financial assistance to medical schools in addition to financing other projects.

This Foundation is incorporated under the laws of the State of Illinois as an educational, scientific organization. All contributions to the AMA-Education and Research Foundation are tax deductible under Section 501(c) (3) of the U. S. Internal Revenue Service Code.

At the present time, the Foundation is seeking funds to support the following programs: (1) unrestricted financial assistance to medical schools; (2) a medical journalism fellowship program; (3) a research grants program for medical research workers; (4) a study of perinatal mortality and morbidity; and (5) a study of continuing medical education. During 1962, the Foundation will also undertake to raise funds to assist in the financing of medical scholarships and for loans to medical students, as well as to physicians in internships and residencies.

The AMA-ERF seeks financial support from physicians, constituent and component medical societies, the Woman's Auxiliary, philanthropic organizations, business entities, and the general public. Within the limitations of the financial needs of its various projects, the Foundation encourages contributors to designate which project they wish to support and, in the case of financial assistance to medical schools, to designate the specific school which is to receive their contribution.

**NORTHERN VIRGINIA CLINICAL ASSEMBLY:** Members of The Medical Society of Virginia are invited to attend the Northern Virginia Clinical Assembly to be held March 14 at the Marriott Motel—at the South end of 14th Street Bridge—just across the Potomac from Washington. The program is being prepared by the University of Virginia School of Medicine and there will be no registration fee.

**SECRETARY RIBICOFF:** Reports from Washington insist that HEW Secretary Ribicoff will resign and run for the Senate in the fall. Ohio Governor Michael DiSalle is reported to be in line for the job.

**ANNUAL MEETING:** Remember that the 1962 Annual Meeting will be a joint affair with the Medical Society of the District of Columbia. Headquarters will be Washington's Sheraton-Park Hotel and the dates are October 14-17.

REMEMBER—SEAT BELTS SAVE LIVES!  
DOES YOUR CAR HAVE THEM?

## *Obituaries . . .*

### **Dr. Nicholas George Wilson,**

Prominent physician of Norfolk, died November 30th, at the age of ninety. He received his medical degree from the University of Maryland in 1895. Following his graduation he set up his practice in South Norfolk and was credited with being the first physician in that area. Dr. Wilson made horse and buggy visits in Norfolk and Princess Anne counties. In 1914, he moved his office to Norfolk and devoted his practice to internal medicine. Dr. Wilson had only recently closed his office in the Medical Arts Building but continued to see patients from his home.

Dr. Wilson was a past president of the Norfolk County Medical Society and had been a very active member of The Medical Society of Virginia since 1905.

An editorial in the Virginian Pilot stated that "Dr. Wilson was the kind of physician that a family would speak of as 'a tower of strength.' \* \* \* He had a special place in the affections of the Norfolk community and no one will be able to take his place. The age of the family doctor, characterized as it once was by warm human and personal relations between doctor and patient, has faded. Dr. Wilson represented it at its best."

A son and two daughters survive him.

### **Dr. James Harry Bocock,**

Norfolk, died December 14th, eleven days after having suffered a heart attack. He was forty-eight years of age and a graduate of the Medical College of Virginia in 1946. Dr. Bocock had practiced in Norfolk for thirteen years and was appointed health officer of South Norfolk in 1949. He had

been a member of The Medical Society of Virginia for twelve years.

His wife and three sons survive him.

### **Dr. Virgil Orion Choate,**

Galax, died October 22nd at the age of sixty-one. He was a graduate of the University of Virginia, School of Medicine, in 1927. Dr. Choate had been a member of The Medical Society of Virginia for thirty-two years.

### **Dr. Harold Fee Corson,**

Arlington, died November 7th. He was sixty-three years of age and graduated in medicine from the Washington University, St. Louis, in 1923. Dr. Corson had been a member of The Medical Society of Virginia for fourteen years.

### **Dr. Spalding.**

Henry Cannon Spalding died at his home in Richmond, November 16, 1961, after an illness of several months. He had rheumatic heart disease for many years and had retired from the active practice of obstetrics and gynecology in July, 1961. He had been in poor health and was confined to his home for three months.

Dr. Spalding was born in Richmond, June 10, 1903, the son of the late Dr. Basil Dennis Spalding and Margaret Antoinette Cannon Spalding.

He was educated at McGuire University School in Richmond and Charlotte Hall Academy in Maryland. He then had his pre-medical education at Johns Hopkins University and the University of Virginia. He attended the Medical College of Virginia and graduated in 1931. Dr. Spalding interned in the Medical College of Virginia Hospitals and was the first resident on the Obstetrical and Gynecological Service. After completing his residency at the Medical College of Virginia, he had special training in

Obstetrics and Gynecology at the New York Poly-clinic Hospital in New York City.

Dr. Spalding was an outstanding physician. He was admired and respected by his associates and many devoted patients.

He was a member of The Medical Society of Virginia, the American Medical Association, The Richmond Obstetrical and Gynecological Society, and the Virginia Obstetrical and Gynecological Society, and a former President of the last two. Also, he was a Fellow and founder of The South Atlantic Association of Obstetricians and Gynecologists, and a Diplomate of the American Board of Obstetrics and Gynecology. He was Associate Professor of Obstetrics and Gynecology at the Medical College of Virginia and a Captain in the Medical Reserve Corps of the U. S. Army.

Henry C. Spalding was a member of Saint James's Episcopal Church, and the Commonwealth Club. He was a kind and friendly man with a host of friends and he was a true Southern gentleman. Dr. Spalding's untimely death is a tragic loss to his profession, his family, and his many friends.

We wish to express to his family our deepest sympathy.

H. HUYNALL WARE, JR., M.D., *Chairman*  
HARRY H. HOWREN, JR., M.D.  
ELAM C. TOONE, JR., M.D.

### Dr. Critcher.

WHEREAS, Dr. Charles Edward Critcher died on December 7, 1961, and

WHEREAS he had faithfully practiced medicine on the Eastern Shore of Virginia for nearly fifty years, and

WHEREAS he had given freely of himself at all hours to serve those who needed him, in good spirit, and

WHEREAS we have felt that he was our good friend and respected his abilities and good humor and valued the association highly, we now wish it known that we deeply regret his passing and wish herewith to convey our sympathy and these expressions to his widow, his family, and the public.

H. L. DENOON, M.D.  
JOHN ROGERS MAPP, M.D.  
*Committee of the Staff of  
The Northampton-Accomack  
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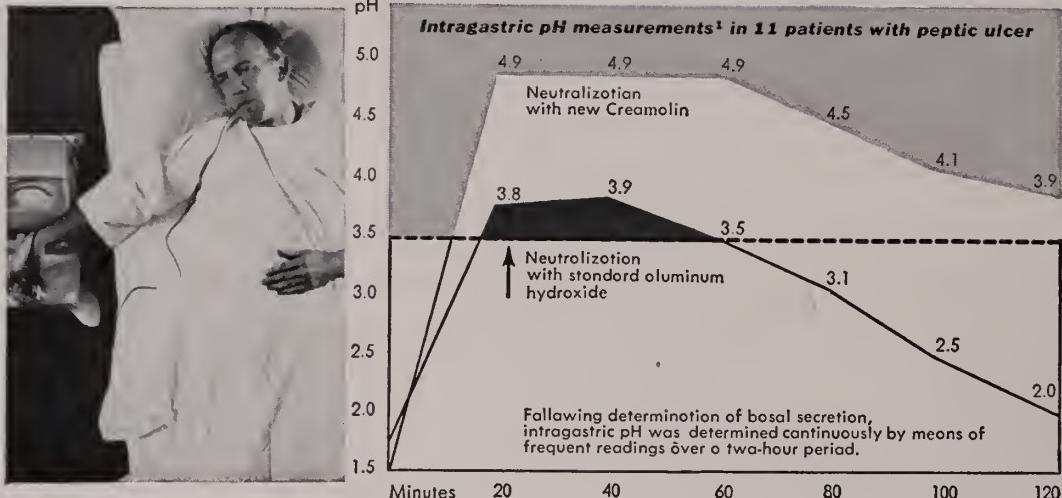
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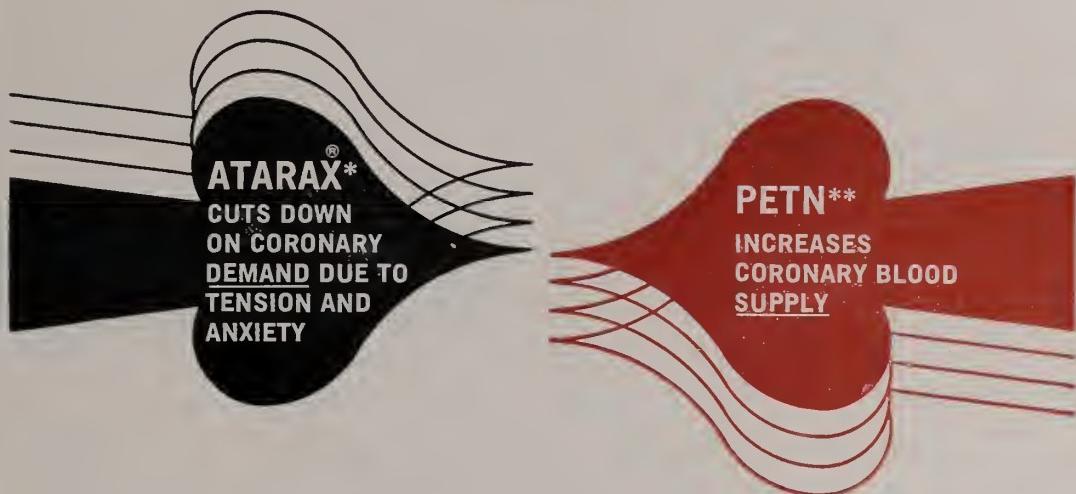
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*References:* 1. Schwartz, I. R.: *Current Therap. Res.* 3:29, Feb., 1961.  
2. Beekman, S. M.: *J. Am. Pharm. A.* (Scient. Ed.) 49:191, April, 1960.  
3. Hinkel, E. T., Jr.; Fisher, M. P., and Tainter, M. L.: *J. Am. Pharm. A.* (Scient. Ed.) 48:381, July, 1959. 4. Data in the files of the Department of Medical Research, Winthrop Laboratories. 5. Hinkel, E. T., Jr.; Fisher, M. P., and Tainter, M. L.: *J. Am. Pharm. A.* (Scient. Ed.) 48:384, July, 1959.

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1. Clark, T. E., and Jochem, G. G.: Angiology 11:361 (Aug.) 1960.

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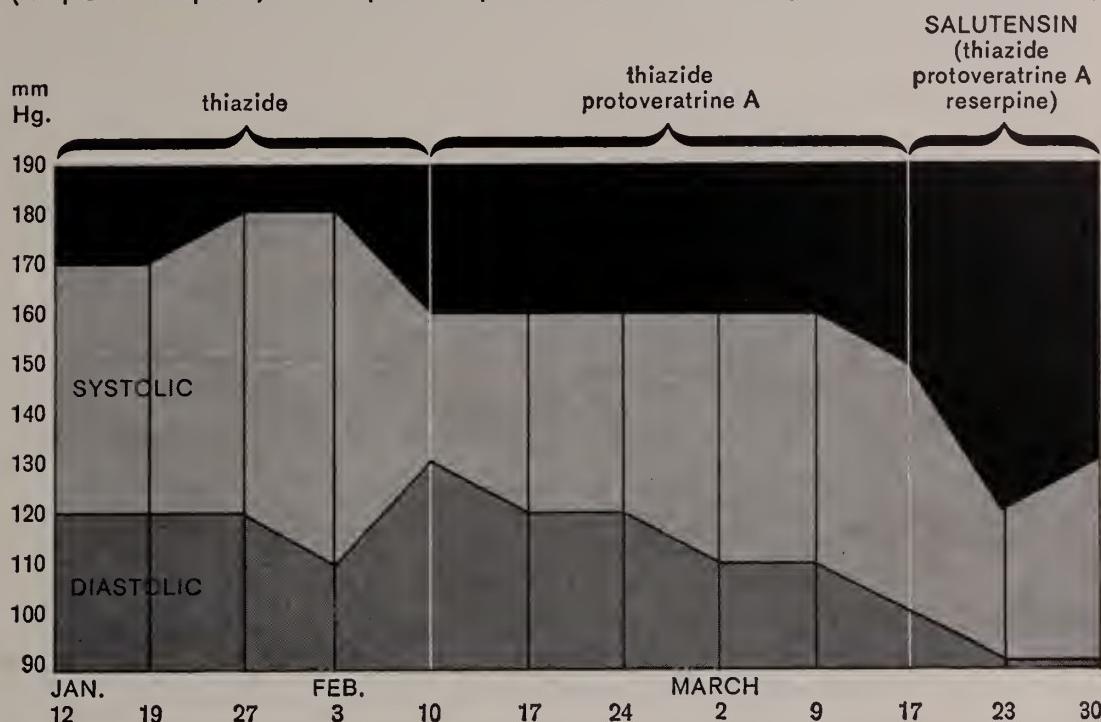
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**References:** 1. Fries, E. D.: In Hypertension, ed. by J. H. Moyer, Saunders, Phila., 1959 p. 123.  
2. Fries, E. D.: South M. J. 51:1281 (Oct.) 1958. 3. Finnerty, F. A. and Buchholz, J. H.: GP 17:95 (Feb.) 1958. 4. Gill, R. J., et al.: Am. Pract. & Digest Treat. 11:1007 (Dec.) 1960. 5. Brest, A. N. and Moyer, J. H.: J. South Carolina M. A. 56:171 (May) 1960. 6. Wilkins R. W.: Postgrad. Med. 26:59 (July) 1959. 7. Gifford, R. W., Jr.: Read at the Hahnemann Symp. on Hypertension, Phila. Dec. 8 to 13, 1958. 8. Fries, E. D., et al.: J. A. M. A. 166:137 (Jan. 11) 1958. 9. Ford, R. V. and Nickell, J.: Ant. Med. & Clin. Ther. 6:461, 1959.

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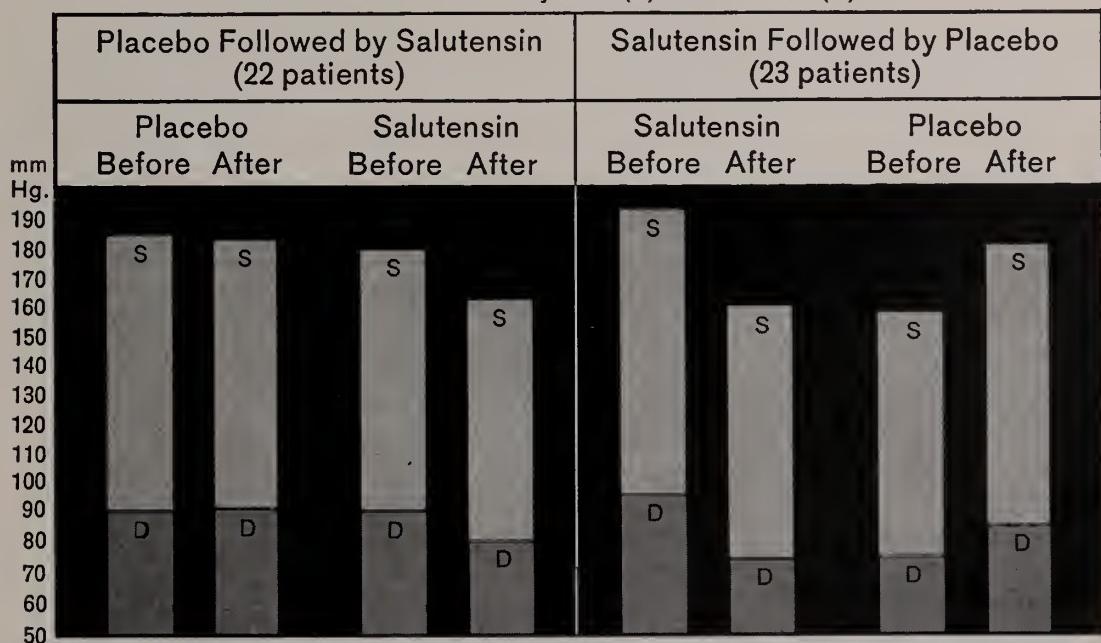
**11 WEEKS TO LOWER BLOOD PRESSURE TO DESIRED LEVELS BY SERIAL ADDITION OF THE INGREDIENTS IN SALUTENSIN IN A TEST CASE**

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1. Barden, F. W., et al.: J. Maine M. A. 46:99, 1955.  
2. Ford, R. A., and Blanchard, K.: Journal-Lancet 78:185, 1958.

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**Recent bibliography:** 1. A.M.A. Council on Drugs, New and Nonofficial Drugs 1961, Philadelphia, Lippincott, 1961, pp. 142-147. 2. Beckman, H.: The Year Book of Drug Therapy, Chicago, Yr. Bk. Pub., 1961, p. 271. 3. Eastman, N. J., and Hellman, L. M.: Williams Obstetrics, ed. 12, New York, Appleton-Century-Crofts, 1961, pp. 845-1035. 4. Keefer, C. S., in Modell, W.: Drugs of Choice 1960-1961, St. Louis, Mosby, 1960, pp. 141, 146, 147. 5. Huang, N. N.: J. Pediat. 59:512, 1961. 6. Smith, R. C. F.: Brit. J. Clin. Practice 15:345, 1961. 7. Asay, L. D., and Koch, R.: New England J. Med. 262:1062, 1960. 8. Berry, D. G., et al.: Lancet 1:137, 1960. 9. Osol, A., et al.: The Dispensatory of the United States of America, ed. 25, Philadelphia, Lippincott, 1960, pp. 953, 1556. 10. Adams, A. R. D.: Brit. M. J. 1:1639, 1960. 11. Jung, R. C., and Carrera, G. M.: Dis. Colon & Rectum 3:313, 1960. 12. De Lamater, J. N.: Am. J. Gastroenterol. 34:130, 1960. 13. Stewart, W. H., et al., in Kelley, V. C.: Brenneman-McQuarrie-Kelley Practice of Pediatrics, Maryland, Prior, 1960, vol. II, chap. 5, p. 19. 14. Wellman, W. E., and Herrell, W. E., in Kelley, V. C.: Brenneman-McQuarrie-Kelley Practice of Pediatrics, Maryland, Prior, 1960, vol. I, chap. 44, p. 13. 15. Wenckert, A., and Robertson, B.: Acta chir. scandinav. 120:79, 1960. 16. Alstead, S.: Dilling's Clinical Pharmacology, ed. 20, London, Cassell, 1960, p. 462. 17. Grover, F. W.: Texas J. Med. 57:355, 1961. 18. Gardiner, W. P., and Gomila, R. R., Jr.: Scientific Exhibit, Venereal Disease Seminar, U.S. Public Health Service, Feb. 28-Mar. 3, 1961. 19. Jacques, A. A., and Fuchs, V. H.: J. Louisiana M. Soc. 113:200, 1961. 20. Nathan, L. A.: Scientific Exhibit, 15th Clinical Meet., A.M.A., Denver, Col., Nov. 26-30, 1961. 21. Ullman, A.: Delaware M. J. 32:97, 1960. 22. Lamphier, T. A.: Scientific Exhibit, New York State M. Soc. Meet., New York, May 7-13, 1960. 23. Freier, A.: Paper presented at Michigan Soc. Obst. & Gynec., Detroit, May 3, 1961. 24. Logan, K. M.: Scientific Exhibit, Ann. Meet., Ohio Acad. Gen. Practice, Cincinnati, Sept. 13-14, 1961. 25. Altemeier, W. A., and Wulsin, J. H. (A.M.A. Council on Drugs Report): J.A.M.A. 173:527, 1960. 26. Krol, W. J.: J. Abdom. Surg. 3:78, 1961. 27. Potempa, J.: Med. Klin. 56:352, 1961.

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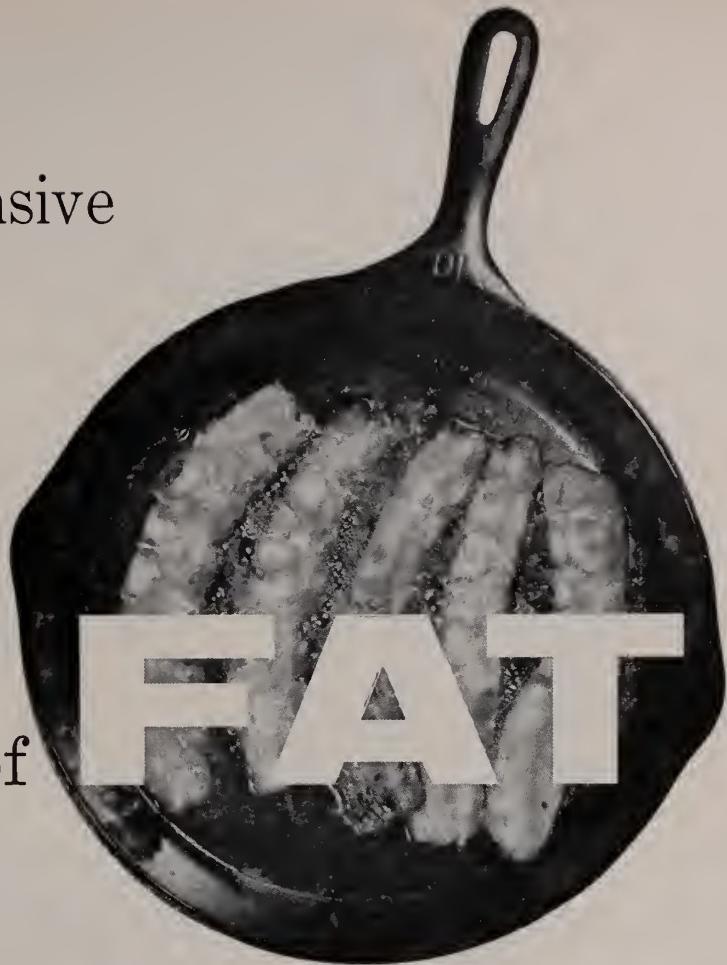
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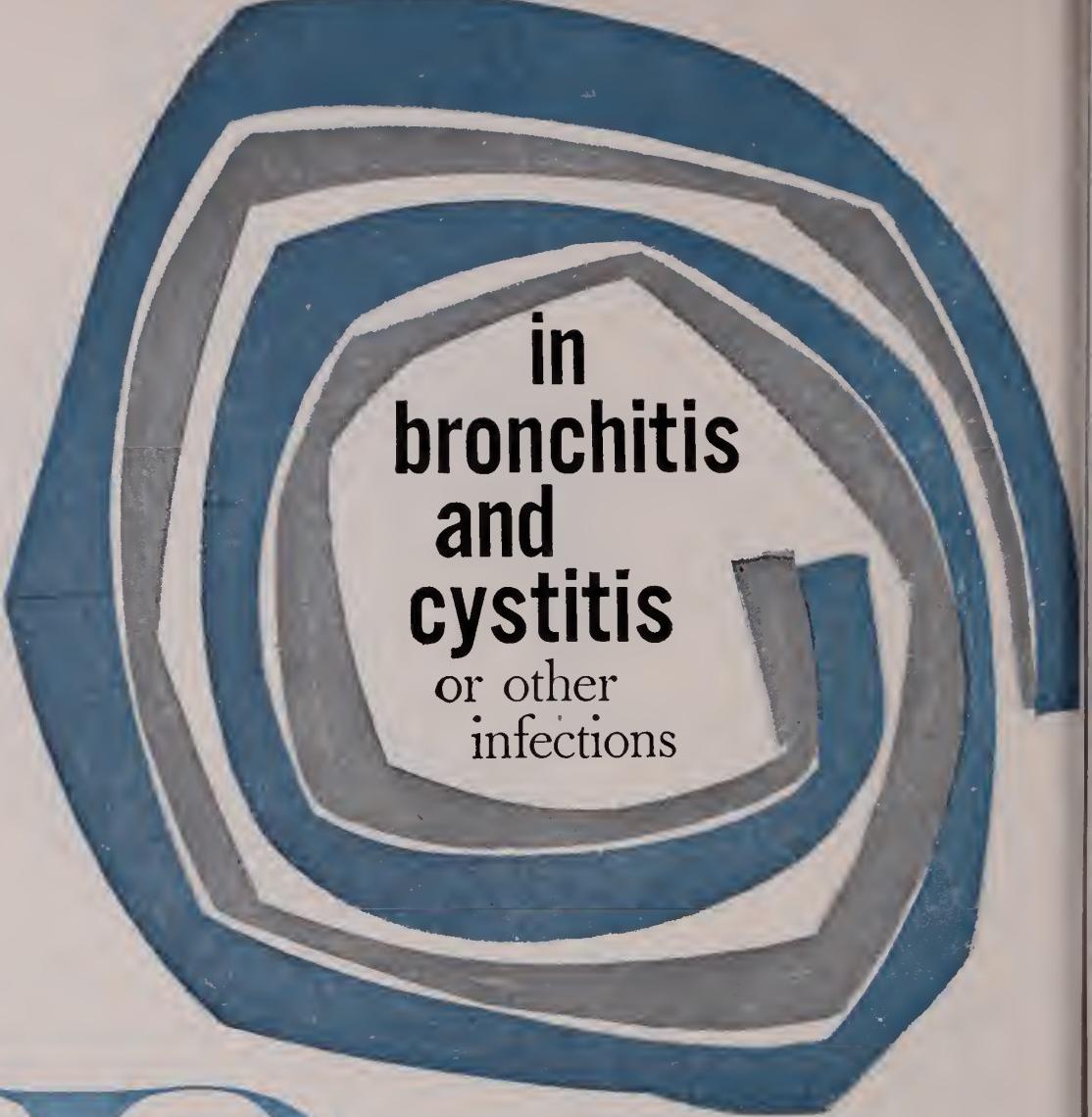
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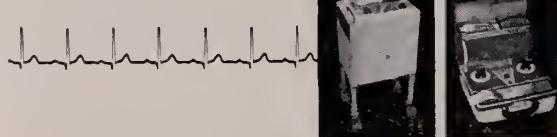
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# \***Raldrate®**

SYRUP OF CHLORAL HYDRATE

**NEW RALDRATE NOW SOLVES THE PROBLEM  
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10 Grains (U.S.P. Dose) of palatable lime flavored  
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**RAPID SEDATION WITHOUT HANGOVER**

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Because the SEGO DIET PLAN from Pet Milk Company has unique advantages ordinary diets lack:

**BUILT-IN ENCOURAGEMENT  
FREQUENT REWARDS  
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The plan begins with new SEGO Liquid Diet Food — the improved liquid with:

**SUPERIOR FLAVOR  
10% MORE PROTEIN  
25% MORE VOLUME FOR  
INCREASED SATIETY**

At each step of the 4-phase graduated diet program more foods are added, ending with a well-balanced normal diet.

Ask your Pet Milk representative for copies of the SEGO Diet Plan and your personal flavor samples—Banana, Orange, Chocolate and Vanilla. Or write Pet Milk Co., Dept. 115, St. Louis 1, Mo.

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For  
Bronchial  
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EACH TABLET CONTAINS

Aminophylline	2 grains
Ephedrine HCl	1/4 grain
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A combination of the most widely recognized drugs for the treatment of asthma . . . compounded for maximum absorption and balanced action, and buffered for tolerance



*Dispensed in bottles of  
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*Cooking with herbs spices up a patient's diet*

## How to help your patient stick to a low sodium diet

The secret ingredient in a successful diet is acceptance. Dishes that are low in sodium can gain flavor and appetite appeal from a variety of other herbs and seasonings. Broiled hamburger, for instance, tastes delicious when it's seasoned with thyme, marjoram and pepper. Rose-

mary, lemon and sweet butter turn broiled chicken into an elegant main dish. In fact, sweet butter can be used many ways—with tarragon on carrots, nutmeg on beans, oregano on tomatoes, savory on limas. Dieters find onions boiled with thyme have a delicious new flavor.

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*A glass of beer  
can add zest to a  
patient's diet*

Sodium 7 mg/100 grm.  
17 mg/8 oz. glass  
(Average of American Beers)

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**major achievement  
in the convenience  
of intramuscular  
antibiotic therapy**

# *Terramycin<sup>®</sup>* *Isoject<sup>™</sup>*

oxytetracycline for intramuscular injection, ready  
to use in sterile syringe with sharp, sterile needle  
— all in one integrated, entirely disposable unit

**completely  
sealed to prevent syringe-  
transmitted hepatitis/  
ready-to-use/tamper-proof/  
disposable...and  
surprisingly economical**



Science for the world's well-being<sup>®</sup>





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# Terramycin® Isoject™

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provides the benefits of Terramycin Intramuscular Solution: rapid effectiveness against a broad range of pathogens; rapid, wide distribution in body tissues and fluids; excellent toleration

**plus... all the advantages of the ISOJECT unit:**

**convenient** completely self-contained/no intricate assembly/no chance of lost parts

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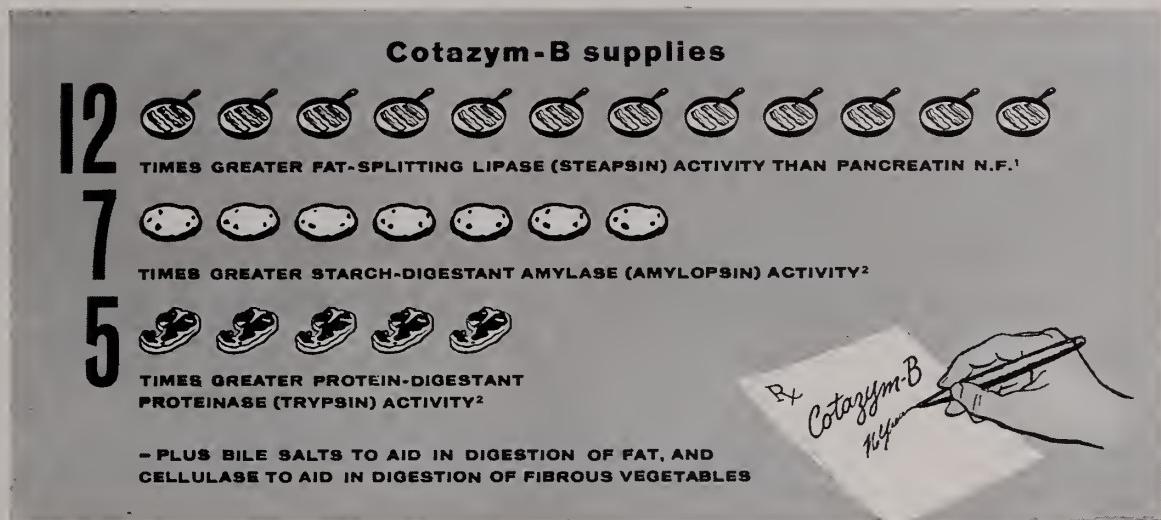
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# Digestant needed?

Cotazym-B provides the most potent pancreatic enzyme action available!



COTAZYM-B is a new comprehensive digestant containing bile salts, cellulase and *lipancreatin* for supplementing deficient digestive secretions and helping to restore more normal digestive processes. *Lipancreatin*—"the most potent pancreatic extract available"<sup>3</sup>—is a concentrated pancreatic enzyme preparation developed by Organon.<sup>4</sup> It has been clinically proven to be an effective agent for treating digestive disorders of enzymatic origin.<sup>1,4,5,6,7,8</sup> COTAZYM-B is indicated for the symptomatic relief of dyspeptic or functional digestive disturbances characterized by bloating, belching, flatulence and upper abdominal discomfort.

*Dosage:* 1 or 2 tablets with water just before each meal.

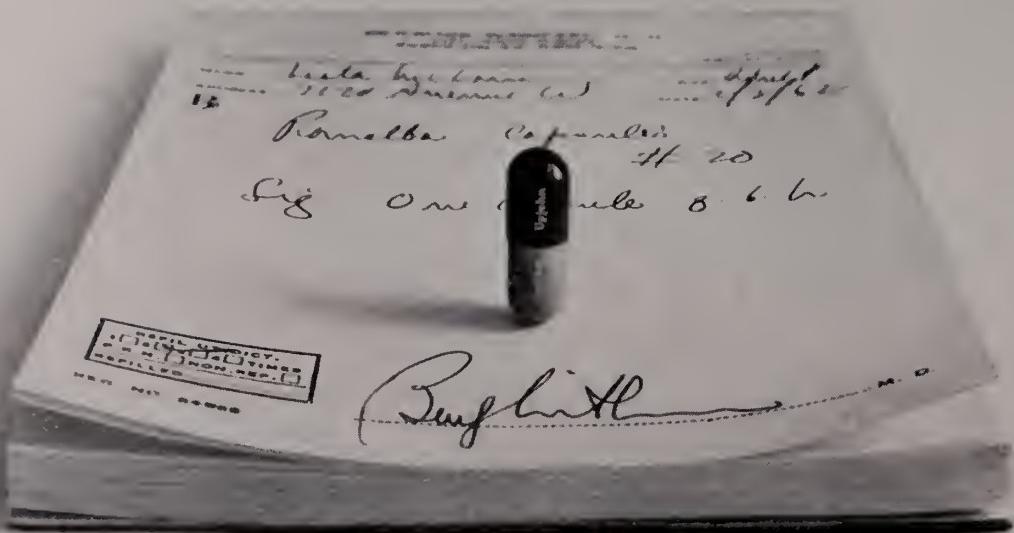
**Organon**

REFERENCES: 1. Best, E. B., Hightower, N. C., Jr., Williams, B. H., and Carobasi, R. J.: South. M.J. 53:1091, 1960. 2. Analytical Control Laboratories, Organon Inc. 3. Best, E. B., et al.: Symposium at West Orange, N. J., May 11, 1960. 4. Thompson, K. W., and Price, R. T.: Scientific Exhibit Section, A.M.A., Atlantic City, N. J., June 8-12, 1959. 5. Weinstein, J. J.: Discussion in Keifer, E. D., Am. J. Gastro. 35:353, 1961. 6. Rufin, J. M., McBee, J. W., and Davis, T. D.: Chicago Medicine, Vol. 64, No. 2, June, 1961. 7. Berkowitz, D., and Silk, R.: Scientific Exhibit Section, A.M.A., New York, June 25-30, 1961. 8. Berkowitz, D., and Glassman, S.: N. Y. St. J. Med. 62:58, 1962.

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# Cotazym®-B

Lipancreatin      Bile Salts      Cellulase



## Launching Pad

In infections of unknown etiology, prescribe Panalba. From the outset, pending laboratory determinations, your treatment is broadened in antibacterial coverage because of the simultaneous administration of two antibiotics that complement each other. They were carefully chosen for this purpose.

Panalba combines tetracycline (selected for its breadth of coverage) and novobiocin (selected for its unique effectiveness against staph). That is why, in most infections of unknown etiology, Panalba offers excellent chances for therapeutic success—and why it should be your antibiotic of first resort.

**Upjohn**

The Upjohn Company  
Kalamazoo, Michigan

### Panalba\* product information

*Supplied:* Capsules, each containing Panmycin® Phosphate (tetracycline phosphate complex), equivalent to 250 mg. tetracycline hydrochloride, and 125 mg. Albamycin,\* as novobiocin sodium, in bottles of 16 and 100.

*Usual Adult Dosage:* 1 or 2 capsules three or four times a day.

*Side Effects:* Panmycin Phosphate is well tolerated clinically and has a very low order of toxicity comparable to that of the other tetracyclines. Side reactions are infrequent and consist principally of mild nausea and abdominal cramps.

Leukopenia has occurred occasionally in patients receiving novobiocin. Rarely, other blood dyscrasias including anemia, pancytopenia, agranulocytosis and thrombocytopenia have been reported. In a recent report it was observed that three times as many newborn infants receiving novobiocin developed jaundice as control infants. For this reason, administration of novobiocin to newborn and young infants is not recommended, unless indication is extremely urgent because of serious infections not susceptible to other antibacterial agents.

The development of jaundice has also been reported in older individuals receiving Albamycin. Serious liver damage has developed in a few patients, which was more likely related to the underlying disease than to therapy with novobiocin. Although reports such as the above are rare, discontinuance of novobiocin is indicated if jaundice develops. If continued therapy appears essential because of a serious infection due to microorganisms resistant to other antibacterial agents, liver function tests and blood studies should be performed frequently, and therapy with novobiocin stopped if necessary.

In a certain few patients treated with this agent, a yellow pigment has been found in the plasma. The nature of this pigment has not been defined. There is evidence that it may be a metabolic by-product of novobiocin, since it has been reported to be extractable from the plasma (pH 7 to 8.1) with chloroform while bilirubin is not. These properties have been employed to differentiate the yellow pigment due to the metabolic by-product of novobiocin and bilirubin. However, recent reports indicate that this method of differentiation may be unreliable.

Urticaria and maculopapular dermatitis have been reported in a significant percentage of patients treated with Albamycin. Upon discontinuance of the drug, these skin reactions rapidly disappeared.

*Warning:* Since Albamycin possesses a significant index of sensitization, appropriate precautions should be taken in administering the drug. If allergic reactions develop during treatment and are not readily controlled by antihistaminic agents, use of the product should be discontinued.

Total and differential blood cell counts should be made routinely during the administration of Albamycin. If new infections appear during therapy, appropriate measures should be taken; constant observation of the patient is essential. If a yellow pigment appears in the plasma, administration of the drug should be continued only in urgent cases, and the patient's condition closely followed by frequent liver function tests. In case of the development of liver dysfunction, therapy with this agent should be stopped.

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## Think Clean!

Detergent, mucolytic, antibacterial, penetrating... qualities that establish Trichotine as a leading vaginal cleanser—both as a therapeutic measure unto itself, and as a cleansing adjunct to therapy.<sup>1-3</sup> A detergent, Trichotine penetrates the rugal folds, removes mucus debris, vaginal discharge, and cervical plugs.<sup>1-4</sup> Surface tension is 33 dynes/cm. (vinegar is 72 dynes/cm.). Trichotine relieves itching and burning—is virtually non-irritating—leaves your patient feeling clean and refreshed. It establishes and maintains a normal, healthy vaginal mucosa in routine vaginal cleansing, as well as in therapy. Whenever you think of a vaginal irrigant, think of the detergent cleansing action of Trichotine.

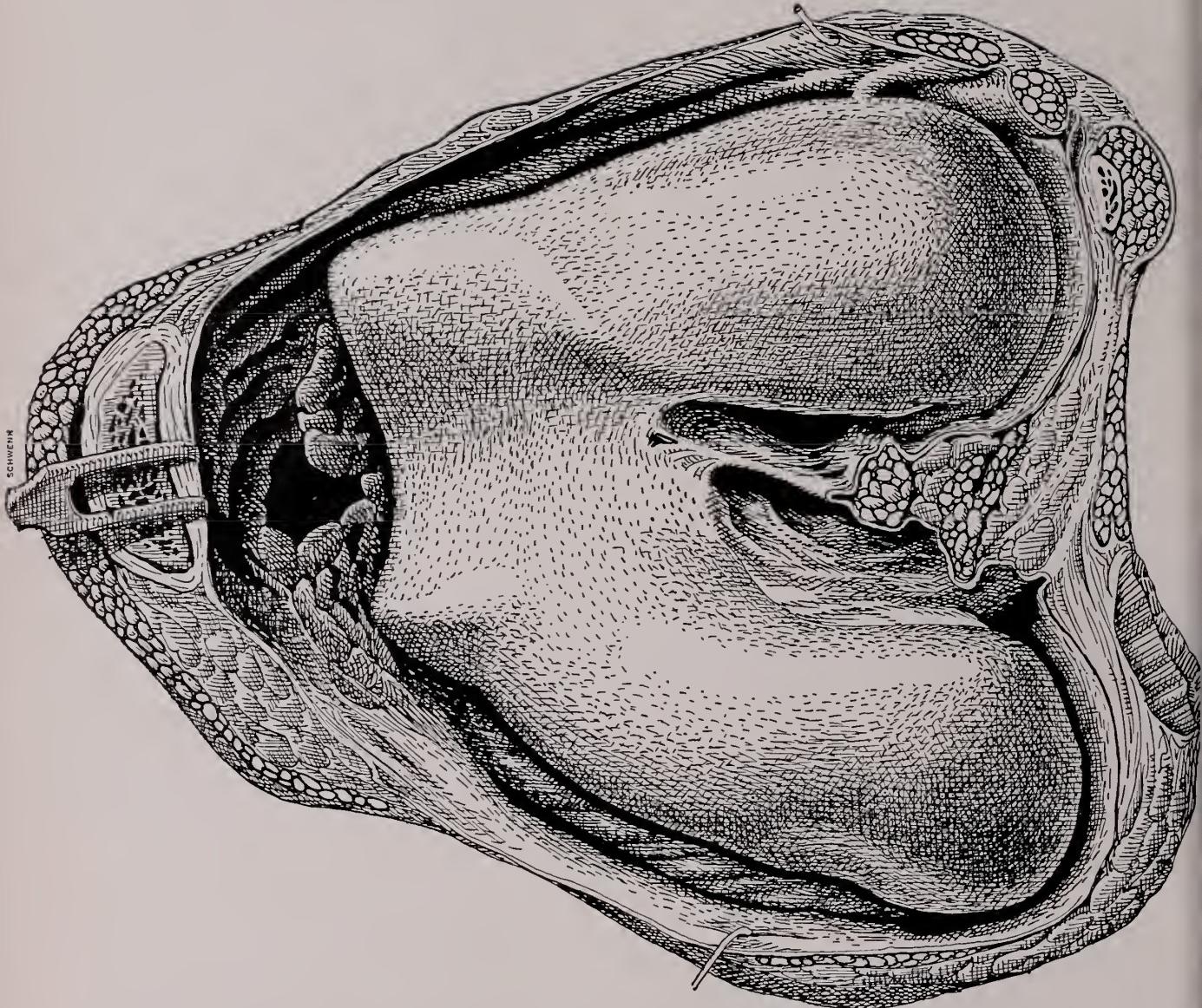
detergent action

for vaginal irrigation **Trichotine®**  
POWDER

ACTIVE INGREDIENTS: Sodium lauryl sulfate, sodium perborate, sodium borate, thymol, eucalyptol, menthol, methyl salicylate.

AVAILABLE: In jars of 5, 12 and 20 oz. powder. REFERENCES:

1. Stepto, R. C., and Guinant, D.: J. Nat. M.A. 53:234, 1961.
2. Karnaky, K. J.: Medical Record and Annals 46:296, 1952.
3. Folsome, C. E.: Personal Communication.
4. MacDonald, E. M., and Tatum, A. L.: J. Immunology 59:301, 1948.



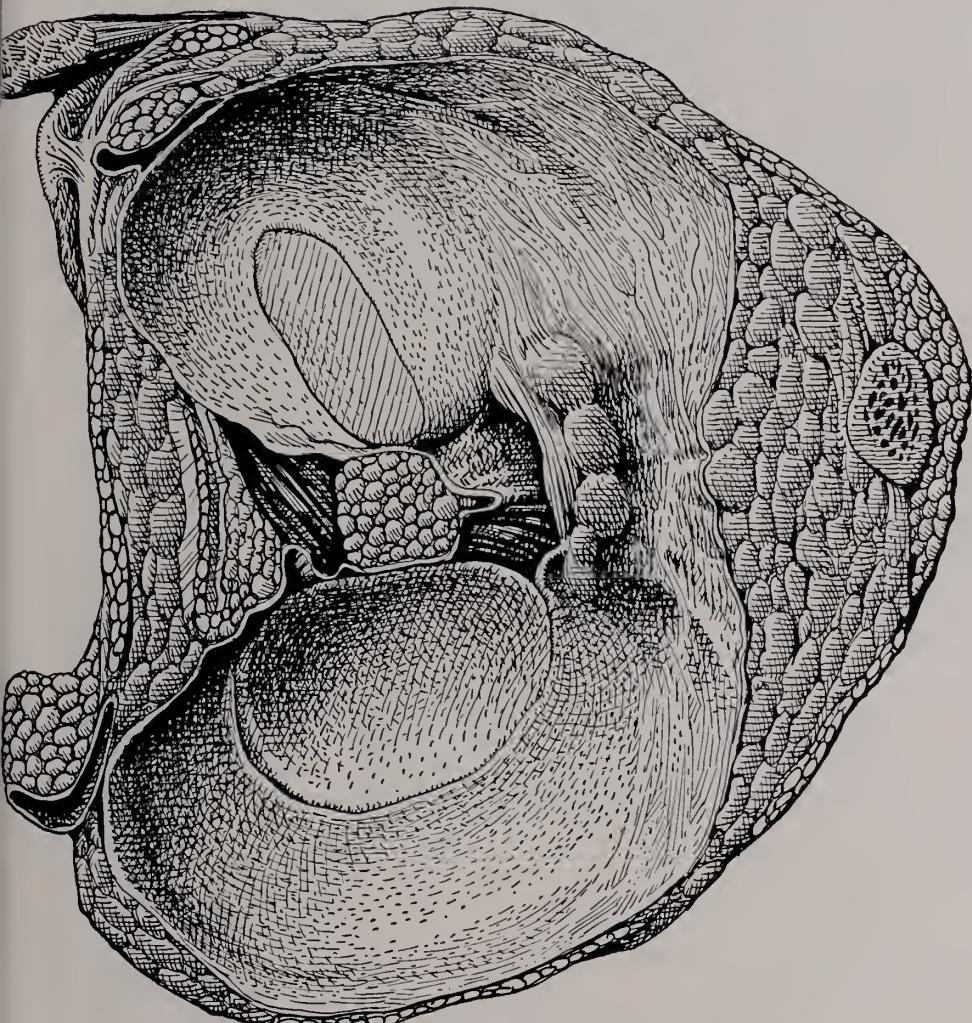
**because patients are more than arthritic joints...  
controlling inflammatory symptoms is frequently not enough!**

Even cortisone, with its severe hormonal reactions, can effectively control inflammatory and rheumatoid symptoms. But a patient is more than the sum of his parts — and the joint is only part of a whole patient. Symptomatic control is but one aspect of modern corticotherapy, because what is good for the symptom may also be bad for the patient.

*Unsurpassed "General Purpose" and "Special Purpose" Corticosteroid...  
Outstanding for Short- and Long-term Therapy*

# Aristocort®

Triamcinolone Lederle



(Knee Joint, Left: distal end of femur; Right: proximal end of tibia)

ARISTOCORT is an outstanding "special purpose" steroid when the complicating problem is increased appetite and weight gain, sodium retention and edema, cardiac disease, hypertension or emotional disturbance and insomnia.

ARISTOCORT provides unsurpassed anti-inflammatory control without sodium retention or edema — without the undesirable psychic stimulation and voracious appetite.

*Supplied:* Scored tablets (three strengths), syrup, parenteral and various topical forms. Request complete information on indications, dosage, precautions and contraindications from your Lederle representative, or write to Medical Advisory Department.

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*Hungry  
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Tareyton's  
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Flavor you never thought you'd get  
from any filter cigarette!

If you're hungry for flavor, Tareyton's got plenty—and it's *plenty good!* Quality tobaccos at their peak go *into* Tareyton! Then the famous Dual Filter *brings out* the best taste of these choice tobaccos. Try a pack of Dual Filter Tareytons—you'll see!



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In  
intestinal  
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prompt  
**4** way  
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diarrhea

- ✓ Curbs excessive peristalsis
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- ✓ Soothes inflamed mucosa
- ✓ Provides intestinal antisepsis



# POMALIN

TRADEMARK

Liquid

EFFECTIVE ANTIDIARRHEAL

**FORMULA:** Each 15 cc. (tablespoon) contains:  
Sulfaguanidine U.S.P. .... 2 Gm.  
Pectin N.F. .... 225 mg.  
Kaolin ..... 3 Gm.  
Opium tincture U.S.P. ... 0.08 cc.  
(equivalent to 2 cc. paregoric)

**DOSAGE:** Adults: Initially 1 or 2 tablespoons from four to six times daily, or 1 or 2 teaspoons after each loose bowel movement; reduce dosage as diarrhea subsides.

Children:  $\frac{1}{2}$  teaspoon (=2.5 cc.) per 15 lb. of body weight every four hours day and night until stools are reduced to five daily, then every eight hours for three days.

**SUPPLIED:** Bottles of 16 fl. oz. (raspberry flavor, pink color)  
Exempt Narcotic. Available on Prescription Only.

Winthrop  
LABORATORIES  
New York 18, N. Y.

Before prescribing be sure to consult Winthrop's literature for additional information about dosage, possible side effects and contraindications.



**Doctor . . .**

- What would paying a bill like this do to your personal finances?
- And what about additional bills for your continuing Office Expenses — if YOU had been the patient?

**AS A PRACTICING PHYSICIAN . . .**

. . . knowing that today's hospital confinements mean BIG bills, you should be the first to own "catastrophic" hospital-nurse insurance for yourself and your family's assured protection.

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**PAYS** 100% of Hospital Room & Board Charges and Hospital Miscellaneous Expense PLUS 75% of in-hospital Nurse Fees — after the selected Deductible Amount has been applied — up to a \$10,000 overall Limit of Payment for expenses incurred within 3 years of any one accident or sickness. Applies to each insured Member, Spouse or Dependent Child.

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. . . knowing that today it costs BIG money to operate your office — even when you are sick or injured and can't be 'on duty' — it's only good business to obtain Overhead Expense protection.

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**PAYS** covered Office Expenses — Rent, Employees' Salaries, Heat, etc. — when you are continuously disabled by injury or sickness for 14 days or more. Payments are made directly to you, and can continue for as long as 1 year if you are totally disabled that length of time.

You select only the protection you need — from \$200 up to \$1,000 a month — based on actual operating expenses. And initial low cost eventually is even lower because premiums are tax-deductible!

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Even if you prescribed a year's supply

the  
last  
Optilets®  
Filmtab®  
would still be good

Actually, doctor, labeled potency will last a much longer time. While we would never recommend by-the-year dosage of a therapeutic nutritional, this does illustrate the unusual stability of Optilets.

The reason, of course, is Filmtab coating. Unlike previous sugar coatings, no water is needed for application. This virtually eliminates chances of moisture degradation.

Greater stability, however, is just one of Optilets advantages. Without sugar's bulk, we can make tablets up to 30% smaller in size. Coatings are less brittle, and tablets less apt to chip or break. As Filmtab coatings are no more than paper-thin, nutrients are more readily available. Yet, patients are protected from vitamin odors and after-tastes.

While stability is important and easy administration an advantage, ingredients are, of course, the main criteria for any nutritional. Please check the Optilets formulas, doctor. We think you'll find them a good choice for your patients.

ABBOTT LABORATORIES NORTH CHICAGO, ILLINOIS

### Optilets

Each Filmtab represents:

Vitamin A	7.5 mg. (25,000 units)
Vitamin D	25 mcg. (1000 units)
Thiamine Hydrochloride	10 mg.
Riboflavin	5 mg.
Nicotinamide	100 mg.
Pyridoxine Hydrochloride	5 mg.
Cobalamin (Vitamin B <sub>12</sub> )	6 mcg.
Calcium Pantothenate	20 mg.
Ascorbic Acid	200 mg.

### Optilets-M®

Each Filmtab represents all the vitamins of Optilets plus the following:

Iron (as sulfate)	10 mg.
Copper (as sulfate)	1 mg.
Iodine (as calcium iodate)	0.15 mg.
Cobalt (as sulfate)	0.1 mg.
Manganese (as sulfate)	1 mg.
Magnesium (as oxide)	5 mg.
Zinc (as sulfate)	1.5 mg.
Molybdenum (as sodium molybdate)	0.2 mg.



## ...you can bet they're not from Abbott

Vitamin products generally taste fine going down, but regurgitative effects may often be downright unpleasant. While this seems like a minor problem, bad aftertaste can discourage patients from continuing needed medication. Filmtab coatings guard against this possibility. Vitamin repeat is brought to a minimum. Unpleasant odors and aftertastes are effectively sealed inside the Filmtab. Tablets are also much easier to take as they

can be up to 30% smaller in size. Bulky sugar coatings have been eliminated and breakage and cracking are less likely. As for stability—it's enhanced! No water is used in Abbott's Filmtab coating process. Chances of moisture degradation are virtually eliminated. When you recommend Abbott vitamins, Doctor, patients get the potency they pay for—today, tomorrow, a year from now.

**Filmtab® vitamins by Abbott:** Dayalets® / Dayalets-M® / Optilets / Optilets-M® / Sur-Bex® with C / Surbex T®

FILMTAB - FILM-SEALED TABLETS, ABBOTT. 202076



When minor aches and pains  
disturb your patients' sleep...

**BAYER® ASPIRIN**  
**DOESN'T MAKE THEM SLEEP,**  
**IT LETS THEM SLEEP,**  
**NATURALLY!**

AND WITH BAYER ASPIRIN,  
THERE'S NO  
"SEDATIVE HANGOVER."

There are, of course, a great many instances of sleeplessness in which the patient should be directed to take a sedative to induce sleep.

But there are also many instances in which sleeplessness is caused by nothing more serious than minor aches and pains which can easily be relieved by one or two tablets of Bayer Aspirin. With physical discomforts gone, sleep comes naturally.

And when Bayer Aspirin is used as a sleeping aid, patients never suffer the "sedative hangover" which so often follows an induced sleep.

So remember, when minor aches and pains disturb your patients' sleep, Bayer Aspirin doesn't make them sleep; it lets them sleep, naturally, with no "sedative hangover."



RELIEVE  
PAIN  
AND FEVER  
OF COLDS  
GRIPPE  
SINUSITIS  
INFLUENZA



# HASAMAL®

(Analgesic-Antipyretic-Sedative)

- Relieves pain and tension
- Reduces fever
- Stops excessive nasal secretions
- Without unwanted diaphoresis

Hasamal, with mild sedation, effectively relieves malaise and discomfort associated with acute infectious disease, such as colds, grippe, sinusitis, tonsillitis, and for earache, headache, and pain of arthritis, neuritis, neuralgia, dysmenorrhea, etc.

Where pain of increased intensity occurs, HASACODE, containing  $\frac{1}{4}$  gr. codeine phosphate, and HASACODE "STRONG," containing  $\frac{1}{2}$  gr. codeine phosphate, provide prompt, effective relief.

**Composition:** HASAMAL: Each tablet or capsule contains: Acetylsalicylic acid,  $2\frac{1}{2}$  gr., acetophenetidin,  $2\frac{1}{2}$  gr., phenobarbital,  $\frac{1}{4}$  gr., and hyoscyamus alkaloids, .0337 mg. HASACODE combines the same formula as Hasamal with  $\frac{1}{4}$  gr. codeine phosphate, and HASACODE "STRONG"  $\frac{1}{2}$  gr. codeine phosphate.

**Dosage:** Hasamal: One or two tablets or capsules every 3 to 4 hours. Hasacode: One or two tablets every 3 or 4 hours; not more than 8 tablets should be taken in 24 hours. **Warning:** Do not use in patients with glaucoma or in elderly patients with prostatic hypertrophy.

CHARLES C. HASKELL & COMPANY

Richmond, Virginia



# sausage?

a problem  
for your  
gallbladder  
patient

For gallbladder patients Entozyme may provide significant relief from the discomforts of fat-induced indigestion. Just six Entozyme tablets (the usual daily dose) digest sixty grams of fat—or more. That's as much as 50 to 90% of the normal daily intake of average adults.

The reason for Entozyme's fat-digestion potency is that each tablet contains 150 mg. of Bile Salts and 300 mg. of Pan-

creatin, N.F. (in an enteric coating). Bile Salts stimulate the flow of bile and enhance the lipolytic activity of both Entozyme's Pancreatin and the patient's own lipase. Together Bile Salts and Pancreatin greatly aid the emulsification and transport of fat.

Entozyme also contains Pepsin, N.F., 250 mg., which facilitates the breakdown of protein.

A. H. Robins Company, Inc., Richmond 20, Virginia

# entozyme®

a natural  
digestive  
supplement

# Theragran®

SQUIBB VITAMINS FOR THERAPY

For your patients with infections or other illnesses who need therapeutic vitamin support. Each Theragran supplies the essential vitamins in truly therapeutic amounts:

Vitamin A . . . . .	25,000 U.S.P. Units
Vitamin D . . . . .	1,000 U.S.P. Units
Thiamine Mononitrate . . . . .	10 mg.
Riboflavin . . . . .	10 mg.
Niacinamide . . . . .	100 mg.
Vitamin C . . . . .	200 mg.
Pyridoxine Hydrochloride . . . . .	5 mg.
Calcium Pantothenate . . . . .	20 mg.
Vitamin B <sub>12</sub> . . . . .	5 mcg.



*Squibb Quality—the Priceless Ingredient*

'Theragran'® is a Squibb trademark

# **nutrition...present as a modifying or complicating factor in nearly every illness or disease state**

1. Youmans, J. B.: Am. J. Med. 25:659 (Nov.) 1958

**cardiac diseases** "Who can say, for example, whether the patient chronically ill with myocardial failure may not have a poorer myocardium because of a moderate deficiency in the vitamin B-complex? Something is known of the relationship of vitamin C to the intercellular ground substance and repair of tissues. One may speculate upon the effects of a deficiency of this vitamin, short of scurvy, upon the tissues in chronic disease."<sup>2</sup>

2. Kampmeier, R. H.: Am. J. Med. 25:662 (Nov.) 1958.

**arthritis** "It is our practice to prescribe a multiple vitamin preparation to patients with rheumatoid arthritis simply to insure nutritional adequacy . . ."<sup>3</sup>

3. Fernandez-Herlihy, L: Lahey Clinic Bull. 11:12 (July-Sept.) 1958.

**digestive diseases** Symptoms attributable to B-vitamin deficiency are commonly observed in patients on peptic ulcer diets.<sup>4</sup> Daily administration of therapeutic vitamins to patients with hepatitis and cirrhosis is recommended by the National Research Council.<sup>5</sup>

4. Sebrell, W. H.: Am. J. Med. 25:673 (Nov.) 1958

5. Pollack, H., and Halpern, S. L.: Therapeutic Nutrition,

National Academy of Sciences and National Research Council, Washington, D. C., 1952, p. 57.

**degenerative diseases** "Studies by Wexberg, Jolliffe and others have indicated that many of the symptoms attributed in the past to senility or to cerebral arteriosclerosis seem to respond with remarkable speed to the administration of vitamins, particularly niacin and ascorbic acid. These facts indicate that the vitamin reserve of aging persons is lowered, even to the danger point, more than is the case in the average American adult."<sup>6</sup>

6. Overholser, W., and Fong, T.C.C. in Stieglitz, E. J.: Geriatric Medicine, 3rd edition, J. B. Lippincott, Philadelphia, 1954, p. 264.

**infectious diseases** Infections cause a lowering of ascorbic acid levels in the plasma; and the absorption of this vitamin is reduced in diarrheal states.<sup>7</sup>

7. Goldsmith, G. A.:

Conference on Vitamin C. The New York Academy of Sciences, New York City, Oct. 7 and 8, 1960. Reported in: Medical Science 8:772 (Dec. 10) 1960.

**diabetes** Diabetics, like all patients on restricted diets, require an extra source of vitamins.<sup>8</sup> "Rigidly limiting the bread intake of the diabetic patient automatically eliminates a large amount of thiamin from the diet. . . . There is some evidence of interference with normal riboflavin utilization during catabolic episodes."<sup>9</sup>

8. Duncan, G. G.: Diseases of Metabolism 4th edition W. B. Saunders, Philadelphia, 1959, p. 812.

9. Pollack, H.: Am. J. Med. 25:708 (Nov.) 1958.

FOR FULL INFORMATION SEE YOUR SQUIBB PRODUCT REFERENCE OR PRODUCT BRIEF.

in respiratory allergies

# TRISTACOMP

Orally-administered triple antihistamines plus two effective decongestant agents—to prevent histamine-induced dilatation and exudation of the nasal and paranasal capillaries and to help contract already engorged capillaries, providing welcome relief from rhinorrhea, stuffy noses, sneezing and sinusitis.

## 2 convenient dosage forms

### TRISTACOMP TABLETS

Each sustained release tablet:

Chlorpheniramine Maleate	2.5 mg.
Phenyltoloxamine Citrate	12.5 mg.
Pyrilamine Maleate	25.0 mg.
Phenylephrine Hydrochloride	10.0 mg.
Phenylpropanolamine Hydrochloride	30.0 mg.

Dosage: One tablet morning and night

### TRISTACOMP LIQUID

Each 5 cc teaspoonful provides one-fourth the above formula.

Dosage: Adults, two teaspoonfuls three to four times daily. Children, one-half to two teaspoonfuls, according to age.



Samples and literature  
gladly sent upon request!



 PHYSICIANS

PRODUCTS CO., INC.  
PETERSBURG, VIRGINIA



## Put your low-back patient back on the payroll

*Soma relieves stiffness  
—stops pain, too*

**YOUR CONCERN:** Rapid relief from pain for your patient. Get him back to his normal activity, fast!

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1. Meyers, G. B.: Ind. Med. & Surg. 26:3, 1957. 2. Murray,  
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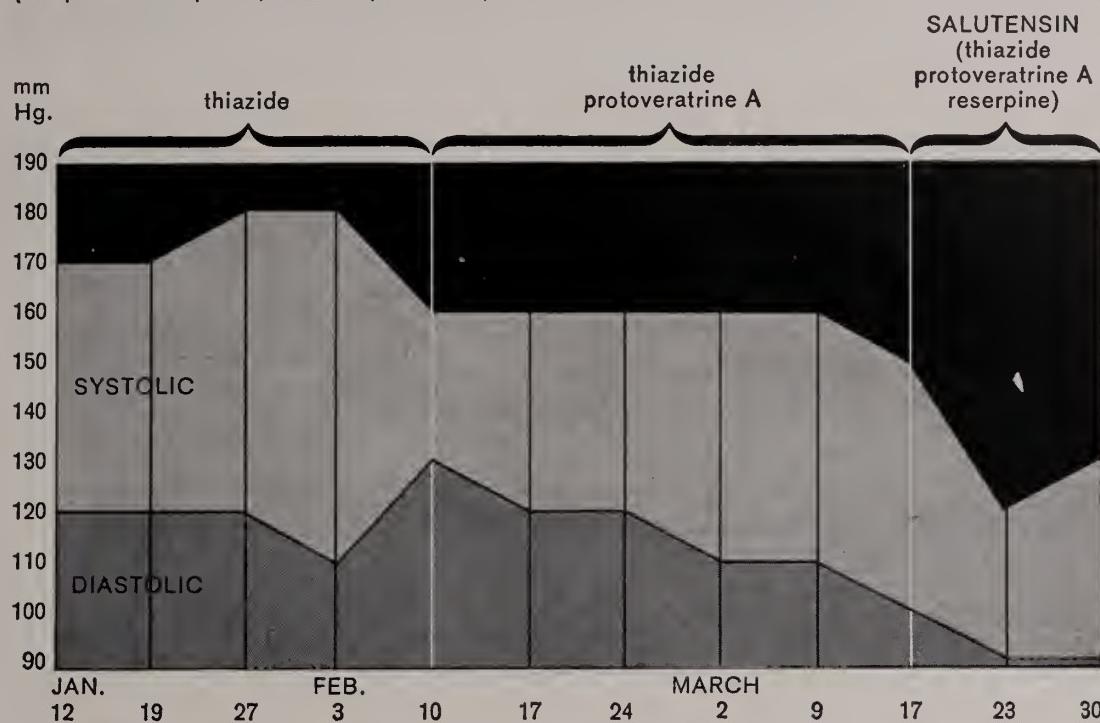
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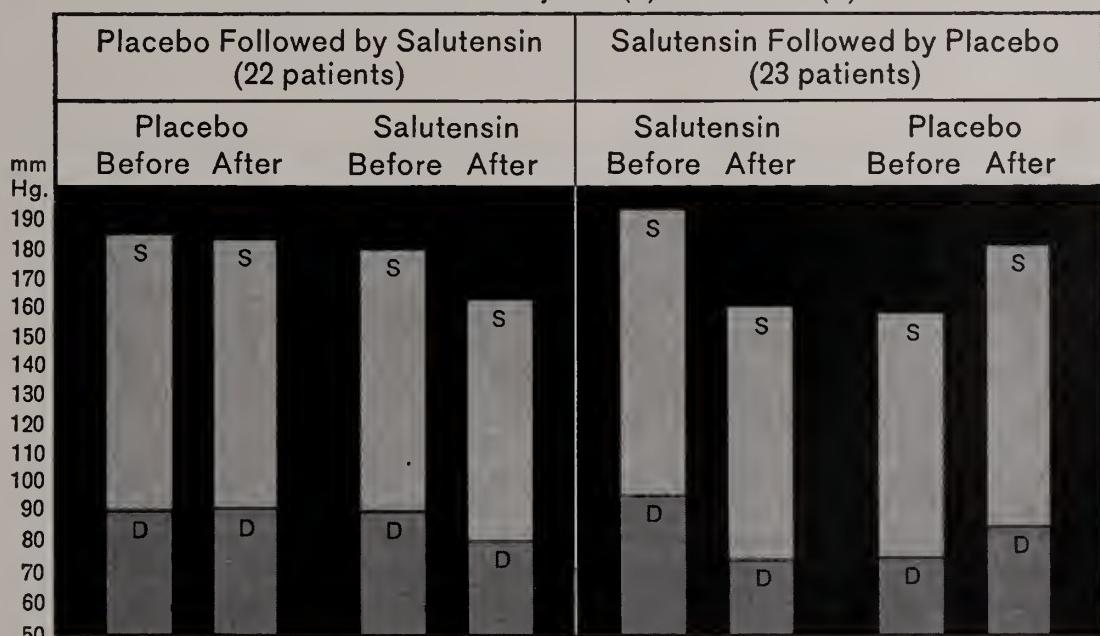
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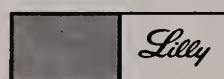
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## Guest Editorial . . .

### Medical School—Community Problems

PROBLEMS arising between a medical school and a community hospital in the same vicinity manifest themselves differently depending particularly upon population and wealth concentration, and at times upon political considerations. As the most common denominator is economic in nature, it should be possible to derive a formula, the application of which would result in a reasonable solution.

The underlying factor of greatest importance is the differing viewpoints towards the *economic ideology of subsidy for the cause of education* under which the medical school practices as an institution as well as through individual members of its full-time faculty in both private and indigent patient categories. While the local profession subscribes to this ideology for the purpose of meeting the high cost of medical education, it is critical of those local applications which make it possible for the school hospital to outbid the community hospital in the competitive areas of hospital administration in such matters as room rates, salary scales and, in particular, contracting for the care of patients supported by taxes and agency funds. The result of this is to affect adversely the scope and standards of medical service generally available to the community.

While the medical school occupies an important place in the community both professionally and economically, and makes available locally special skills and facilities, the school hospital does not presume to take care of the private community sick as regards number or types of cases. Also it provides very limited bed space and operating room time for patients of local physicians on the part-time faculty.

The community must have hospital facilities of its own. The community hospital should have well-developed departments in the major divisions of medicine with facilities in the specialties. It should have sufficient indigent cases to support an intern and resident training program. A hospital of this type would meet the needs of the community.

Furthermore, it would provide proper hospital facilities for the local profession, some of whom are members of the part-time faculty, and in so doing, it would relieve what is probably the chief source of resentment against the school.

In certain economic areas of overlapping interests, the community hospital, being almost solely dependent upon income from services to patients, is at a disadvantage with the school hospital which is subsidized as an educational institution. A school policy recognizing the generally accepted *domain of the community hospital* is essential to any satisfactory solution to the problem. This domain should include community services and the care of public welfare patients to the extent necessary to permit it to operate upon a broad economic basis with high professional standards in both the private and indigent categories of patient care.

A community hospital in the vicinity of a medical school is in a favorable position to take an active part in the school's educational program to the advantage of both institutions. Organized along educational lines, it could complement the clinical material of the school hospital in those fields naturally limited by its referral admissions policy, and could supplement it in other fields. The part time faculty would be strengthened as a result of practicing and teaching under proper conditions. An arrangement of this kind would broaden the educational program for the students and house staff.

The medical school by reason of its prestige, influence and financial backing is in a position to adopt a policy of recognizing the domain of the community hospital. To make the policy really effective, it should subordinate to the welfare of the community its interests of a local nature which are in conflict with those of the community hospital. Such a policy would relieve the cause of most of the controversy which places the medical profession in an unfavorable light before the public. By having the community hospital participate in its educational program, the school would extend its influence in an important field and at the same time further benefit the community of which it is a part.

WILLIAM H. PRIOLEAU, M.D.

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158 Rutledge Avenue  
Charleston, South Carolina

*Editor's Note:* Dr. Prioleau is Clinical Professor of Surgery, Medical College of South Carolina and Director of Surgery, Roper Hospital.

# The Economics of Medical Care

R. O. SMITH, M.D.  
Pulaski, Virginia

*Some pertinent thoughts on the economics of medical care are presented clearly and concisely.*

WE, in the medical profession, are caught up in a dispute which has wide implications for everyone in this country. It seems to many of us that certain changes are now proposed in medical practice which would lead to inferior medicine and would also seriously damage our economy.

Although we feel our interest in this struggle is identical with that of the general population, it would be useless to claim that we are abnormally altruistic. We should recognize that any man in his search for the material satisfactions of life is motivated by self-interest.

To admit that man is inherently selfish is not to deny or belittle his capacity for generous behavior. Anyone who has had the opportunity to contribute to another's happiness can appreciate that it is a most rewarding experience. Yet very few of us are in a position to ignore material considerations entirely.

We should not object if others believe the American Medical Association is chiefly concerned with the welfare of its members. We may safely acknowledge that this is possible, and then we can recommend the same frankness to labor leaders, politicians, educators, and to any other group which is inclined to believe that whatever is best for it is best for society.

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Presidential address given before the Virginia Society of Ophthalmology and Otolaryngology, Roanoke, May 5, 1961.

Selfishness, which Adam Smith<sup>1</sup> called "self-love", is a human characteristic. It is a weakness only when we fail to recognize it and to compensate for it in a manner which will yield a greater good.

Adam Smith believed that competition among men, whose chief concern was with their own profit, could be relied on to benefit society as a whole. For competition to be effective, however, it is not enough that the producer be able to offer his goods and services, but the consumer must be free to buy or not as he chooses.

There are limits to competition which we all recognize, but ownership or direction by government offers no dependable incentive to good management. Certain taxes are justifiable, but when larger and larger levies are made, on the theory that man is incapable of spending his wages wisely and that only government knows what is good for him, then the consumer becomes a non-entity in the market place. He will pay a higher price because of inefficient management. Also he must pay for goods and services which he does not need, and some which he might choose to buy will not be available. There is every reason to believe that these economic truths apply to medical care.

It was Adam Smith, again, who distinguished between nominal wages or "price of labor", expressed in terms of money, and real wages, measured by the commodities which money may command. This distinction is well nigh self-evident, but our economic woes too often result from failure to recognize it. Politicians and leaders of labor groups find it especially expedient to promise relief through higher monetary wages.

It is appropriate to point out that medical care, also, may be either real or nominal. Real medicine consists of the goods and serv-

ices which protect and promote the health and happiness of humanity. There are important differences between this and nominal medicine. No single illustration, however, no matter how dramatic or appropriate, would be truly typical and representative. It may suffice to say that money, even when inflated, may bear some relationship to real wealth, while many practices which achieve wide currency in the name of medicine may not only be completely worthless, but even vicious. Here again we may expect that demagogues will exploit the political advantages of nominal medicine whenever it suits their purpose to do so.

In our role as physicians, we should encourage a realistic, rather than an emotional, attitude. Our goal should be the most efficient production and distribution of medical care which is possible within a free society, but, no matter how much we may wish to expand it, there are practical limitations which we must recognize and respect.

Many of us have said at times, and I think with considerable truth, that we do not know of anyone in real need of medical care who cannot obtain it. This favorable condition exists because of an ancient form of restraint which may be called the "price system". It is well known that a large percentage of medical care is given freely to patients who may have a limited ability to pay, or who may choose, regrettably, to disown responsibility. Nevertheless, the price system has spared the physician from an intolerable burden. Doctors have found it possible to read and study, and to meet together in order to remain abreast with medical progress, while, at the same time, they have supplied the exceptional attention which many patients require.

There are growing numbers of lay persons who are concerned with apparent inequities in the distribution of medical care. Many blame the price system, and would like to abolish it, starting, very conveniently, with the health requirements of the older age group. It is unfortunate that these professed humanitarians have no clear concep-

tion of what constitutes real medical care, nor have they any but the vaguest notion of how to increase the supply and control the demand when all financial responsibility is removed.

There will always be some persons who either do not receive, or will not accept, medical care, just as there is always, in our society, a certain percentage of potential workers who are unemployed. Witness the organized, and often effective, resistance to controlled fluoridation of the public water supply, which is indisputably advantageous to the public health.

There are many patients who do not know that medical care is available to them. Many others are not even aware that they need help. However, by far the greatest outcry is by and in behalf of those neurotics, who may not even be sick at all, but whose testimony can be most impressive.

The demand for medical care and the need for it are only roughly parallel. It has been shown that placebos of all types, including some surgical procedures, will relieve symptoms in one-third of all cases. This fact suggests that the demand for medical care is even now excessive and the patient has been "conditioned" to ask for more medical care than he requires ideally.

We may look on the process of conditioning as the sum of the influences, including both information and the lack of it, which mould the patient's conception of his needs. In so far as he is educated to appreciate sound prophylactic and therapeutic principles, the process operates in his interest. Such patients can be treated adequately with a minimum of effort.

Other influences may be disastrous. In our rapidly changing society, we are losing our traditional cultural heritage. Children and parents are almost equally immature and irresponsible. Throughout their lives their thinking is done for them, and their self-confidence is assailed from all sides. Professional fund raisers for medical research frighten them. Government agencies promote every phase of insecurity and depend-

ency. Unethical drug companies hammer at aches, pain and even normal sensations.

These items are a few in the long list which sponsor time-consuming, often intractable, psychosomatic complaints. They create the patient type which insists that "something must be done." Relatives, friends, and, of course, politicians join in the clamor. The patient goes from doctor to doctor until hospitalized. Often he is more interested in establishing the validity of his complaint than in getting well.

Pain has the biological function of protection, but it is not a built-in quantitative response to graduated stimuli. The awareness, amplification, and interpretation of sensory impulses will depend on how the individual is "conditioned". Intelligent interpretation of pain is profitable. Misinterpretation leads to insatiable demands and wasted effort.

What may be called the "scare technic" can be temptingly effective. It will raise money, make money, and win voters. It can be profitable to exaggerate the evils which one claims to cure, and under government medicine we can expect that relaxation of financial restraint plus propaganda for political profit will produce an unpredictable, unmanageable surge in the demand for whatever passes as medical care.

It is axiomatic, also, that the creation of a better product will result in an increased demand. This is well exemplified in medicine as more and more pathological conditions are being brought under control. Many of the newer technics may be highly specialized, and often their use is expensive and laborious. On the other hand, immunizations, antibiotics, most surgery, and safety procedures tend to reduce the medical care necessitated by infections and accidents, but they create new and sometimes vastly greater demands by prolonging life.

Beset by the various pressures which build up demand, the medical profession, rather than its critics, appreciates the urgent need to increase the supply of medical care. The basic goals in such a program will concern

plant facilities, personnel and technics.

In the past there have been many more applicants to medical schools than could be admitted, but it is desirable to graduate not only more, but better, physicians. Much has been said in recent years about making mathematics, the physical sciences and the field of education attractive to prospective students, and we have neglected to emphasize the moral, intellectual and economic satisfactions which must be made available if we are to fill the ranks of the medical and allied professions.

The economic phase of the medical scheme has fallen into disrepute. To many it seems ignoble that the support of the aged and the relief of suffering should have any material implications. It is not a question, however, of how we might like to manage such matters, but, rather how we may obtain the greatest practical advantage. It is unwise to ignore the economic urge. For instance, our dependence on uncompensated contributions to our blood banks results in constant turmoil and an uncertain supply. Some modification of the system is necessary.

Competent students should be liberated from the mediocrity of our public school system and should be encouraged to begin their professional studies at an earlier age. It is doubtful, though, that the professional years can be shortened appreciably. Only a revolution in teaching and training technics will enable the student to keep up with the expansion in basic knowledge within the time which is now allotted.

We need new medical schools and their associated teaching hospitals and research laboratories. It will be advantageous to locate many of them away from established urban centers. Such a distribution of teaching facilities would favor a more uniform distribution of physicians and of medical care.

The various states and localities have proven that they can and will provide for these needs. Our standards for new institutions should be realistic, with emphasis more on future needs and hopes, than on the im-

mediate level of achievement. The problems involved demand cautious deliberation. They will not be solved by an hysterical crash program. Nothing would smother initiative and progress more than monopolistic domination and direction at the federal level.

Government likes to equate its services with the amount of money which is spent, but this index would be most misleading with respect to medical care. It costs nothing for a patient to stop smoking, or for a parent to provide a child with adequate love and appropriate discipline.

One of the most productive categories of medical care is the dissemination of practical knowledge to the laity. Our patients need help in interpreting and assimilating the many news items which pertain to medicine. We have a major role in this ministry of information, even though much can be done without our personal intervention.

Advice on marriage and on the training of children should be freed from romanticism and sentimentality. Simple hygienic practices, as in the common cold, would save visits to the doctor, hospitalization, and expensive drugs.

Governmental agencies can help by discarding the scare technic. The tobacco industry might well contribute to research designed to help smokers free themselves of their addiction. Educators should get rid of compulsive ritualism and emotionalism. In short, the greatest return will come from our sincere efforts to help people enjoy the health and happiness which is within their reach, instead of making them feel exploited, because someone else is relatively more prosperous, or inferior, because they do not conform to some preconceived ideal.

The conditions which affect the demand and supply of medical care are relatively obscure, and the consequences of their interaction may be so remote that we ignore the causal relationship. On the other hand, distribution can produce an immediate impact and tends to monopolize the attention of social planners. All of us, indeed, recog-

nize the need for constant improvement in this phase of our medical problem.

The price system has been an effective instrument for distribution. It has been flexible, generally. The fees are based typically on the importance of the service, the labor involved, and the willingness and ability of the patient to pay. With increasing multiplicity of the services, however, pricing becomes more involved and may give rise to apparent inequities. The busy physician is apt to value his time and personal attention highly, while the patient is more likely to be impressed by physical contact.

I doubt if it would ever be best for fees to be completely standardized. It would benefit everyone, therefore, to have a clearing house where disagreements and misunderstandings could be aired and resolved. The usual "grievance committee" of physicians is scarcely the answer. An attorney, or perhaps someone trained in public relations, who would be freer of bias and emotion, could discuss these questions calmly and would be a more effective go-between.

Whatever the merits of the fee system may be, we should consider and adopt other methods of marketing whenever they promise to be superior. In particular we should work together to provide adequate protection from financial disaster caused by ill health.

In recent years, there has been a phenomenal, unprecedented growth of a variety of actuarially sound insurance plans which have done much to ease the burden of higher medical and hospital costs. On occasion, these protective agencies result in excessive demands because the patient may feel that someone else will bear a disproportionate share of the cost. The higher premiums which result will only partially correct these abuses. If these schemes are to operate successfully, we must alert ourselves and inform our patients with respect to our combined responsibilities.

Professor E. A. Hayek,<sup>2</sup> as a student of social and political science, has investigated

the problems of health insurance. He believes that the growth of health insurance is desirable and is opposed to having the field monopolized by the state. He states that our social security apparatus is an avowed scheme for the redistribution of income. It has no relationship to insurance. No one covered by it knows what he has or has not paid for, or is entitled to. "Social security" is a "system of provision for the aged under which each generation, by paying for the needs of the preceding one, acquires a similar claim to support by the next."

R. M. Peterson<sup>3</sup> points out that the social security program is financed by deficit spending. Therefore, the contributing employees of tomorrow will be required to support both generations, the young and the old, who will not be permitted to work, and also must pay the interest on an unpublicized, mountainous debt. The stability of this planned Utopia will depend on preserving indefinitely the indispensable, insuperable ignorance of these who must pay the bill.

Professor Hayek believes that the case against free medicine for all is "overwhelming". We should make up our minds whether we wish to help the ill and the aged, or whether we wish to make it impossible for them to help themselves. All sheltered monopolies become inefficient with time. Historically, the evolution of insurance supports the assumption that we will derive the greatest benefits from continued operation and development of voluntary, not government dictated, programs for health protection.

If we examine those who propose to eliminate price and personal responsibility in the field of medical care, we find a fringe of humanitarians, but the hard core consists of politicians and leaders of rigidly organized labor groups. These forces have combined with the objective and expectation of controlling our general elections. The medical issue was raised because of its strategic importance and emotional appeal, not because the situation was emergent.

Welfare oriented politicians will always be compelled to multiply their promises of "something for nothing". Their program has no end, and no lasting truce or compromise is possible. New elections will always require new issues.

The more the demagogues obtain, the more they will demand. If they should ever exhaust the political advantages inherent in medicine, education, and care of the aged, they will extend their frontiers to include every other personal responsibility which may remain.

At some point in this cycle, when printing presses break down and bankruptcy is inescapably imminent, we will do an about face. The voting masses, for whom everything was to be free, will now be cajoled, threatened, and driven by force to exceed their quotas for the glory of Socialism and the State. The labor leaders, politicians and bureaucrats will have destroyed the economy which made them fat, although it is likely that they will have retained the power which is their main concern.

If it were possible to provide unrestricted medical care for all, we could scarcely oppose any such system. But this is not the case. The very fact that medical care is regarded as expensive proves that there is a limit to the supply. It must continue to be rationed, whether by price, or by politicians.

Whenever our government seeks to invade a new field, it always denies that federal aid means federal control—and, almost in the same breath, it claims the right to direct any other activity in which it participates financially. In the field of federal medicine, we can expect, as Professor Hayek suggests, that a social service bureaucracy will tell us what to do and how to do it, and, in addition, we will pay whatever tax is needed to support its self-righteous propaganda and to perpetuate its supremacy.

Under government medicine, we can expect spurious, fantastic, ruinous demands. Inefficient bureaucratic management will bring a stunting of development, lowered productivity and higher costs. The fact that

we are spending tax dollars will not change these truths, but will make them less obvious. In the end, there will be substantially less of the medical care which we set out to obtain.

These newer ventures of our government into medical care will not be in the nature of experiments. They are likely to be designed so that, no matter how disastrous, they may be irrevocable—like scrambled eggs.

We have talked about socialized medicine until the term seems hackneyed and meaningless. Perhaps we did not appreciate its meaning fully because we were thinking too much of ourselves. The term should, in truth, make us aware that socialism threatens more than our own profession. It menaces the entire economy and the foreseeable future of our country.

There are men today, who call themselves liberals, who would take away any and, if need be every, liberty which blocks their frenzied efforts to standardize and redistribute all good things. Those of us who are more conservative are pictured as being unalterably opposed to change, like the government of Imperial China. In place of groping about in a maze of contradictions, we should actively inform ourselves. There is no better beginning than to read the short, carefully documented study by Professor

John Jewkes,<sup>4</sup> called "Ordeal by Planning".

In conclusion, I wish to emphasize the opinion of a brilliant theorist, the late Henry C. Simons.<sup>5</sup> He said, "our primary problem is production. The common man or average family has a far greater stake in the size of our aggregate income than in any possible redistribution of income." It is obvious that income is used in a broad sense and that it includes medical care. Coercive central action may force the bloom but "use up the roots of progress." All of us must realize that we are living in a changing and expanding world. New problems are arising which will need new solutions, but we believe that we are even now finding the answers under a competitive system which has proven its ability to produce whatever the consumer—in this case, our patient—needs.

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### Politician at the Bedside

We trust the Congress has gumption enough not to approve some of the ideas of the coonskin crowned Senator about drug patents. To do so would only sound the death knell of pharmaceutical research. The Senator's ideas about lack of competition are not factual; he simply doesn't know what he is talking about . . . His plan to make a Federal bureau the judge of efficacy is nonsensical. The clinician at the bedside is the one to determine efficacy. The politically climbing Senator would lodge too much autocratic power in a Washington bureau which might become dictatorial.—Editorial in *The West Virginia Medical Journal*, Oct. 1961.

# A Few Remarks on the Orthopaedic Aspects of Low Back Pain

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*Low back pain is such a common complaint that all physicians are called on frequently to treat patients with this symptom. It is well that we all prepare ourselves with an understanding of the etiology and diagnosis and a familiarity with the conservative treatment of low back pain.*

MY PART in this symposium is to present the orthopaedic aspects of low back pain. However, before the orthopaedist can in any way satisfactorily diagnose and treat patients with low back pain, he must have a comprehensive knowledge of the psychogenic and neurologic aspects of the problem. He must know how to recognize and interpret symptoms as given to him by the patient. He must know when there is exaggeration and undue emphasis being placed on certain aches and pains. He must know what symptoms relate to the back per se and what relate to other parts of the body. He must know how to perform a good neurologic examination and how to interpret these findings in light of symptoms.

## Incidence

Patients with low back pain constitute a very large part of the practice of the ortho-

paedic surgeon in the office, clinic and hospital. This part is probably not less than 15 to 20 per cent.

Diveley<sup>1</sup> reports that in an analysis of 1,000 individuals he found over 45 per cent of persons over forty years of age have or have had symptoms of backache, and approximately 42 per cent of this number had some congenital anomalies and weakness of the lumbosacral spinal structure. It has been said that in industry the most common single reason for occupational disability is pain in the back, usually attributed to an injury while at work. Since most of the patients with low back pain are seen first in the office of the family physician, a symposium on the subject is certainly most appropriate for a meeting of physicians in general practice.

## Classification

Your speaker believes the classification of low back pain of J. Vernon Luck<sup>2</sup> to be the best for a discussion of this type. Luck divides the conditions into those due (1) to joint problems, or arthrogenic, (2) to muscle problems, or myogenic, (3) to nerve problems, or neurogenic, and (4) to psychological problems, or psychogenic. There cannot be a sharp line of division in this classification as many back conditions may fall into two or more of these groupings. English and Weiss<sup>3</sup> stated several years ago, "The day is near at hand when there will be the final outmoding of the either/or concept; i.e., either functional or organic in diagnosis, and there will be placed in its stead how much of one and how much of the other; i.e., how much of the problem is emotional and how much is physical." The thoughts in this statement are extremely

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basic and must be considered by all physicians caring for patients, not only with low back pain but also with other musculoskeletal disorders. If the psychological aspects of backache are not given due consideration by the examining physician, errors in diagnosis too often will be made. Nothing is more unfortunate for the physician than to find that after weeks of treatment for low back pain, employing such therapy as rest, heat, massage, exercises, strapping, and perhaps a brace, the psychogenic factor is more important than the physical.

### Etiology

What are some of the common physical causes of low back pain? Colonna<sup>4</sup> has divided these into three age periods: (1) in youth with strenuous activity, the most common conditions are strains, sprains, dislocations and perhaps fractures; (2) in an older age period when there is less activity (perhaps in middle age), diseases of the spine, particularly degenerative arthritis are most common, and (3) in a still older period, osteoporosis and the well-established degenerative arthritic processes are found.

Diveley<sup>5</sup> and associates report that in an analysis of over 3,500 patients with low back pain treated over a period of twenty-five years, lumbosacral strain was found to be the most frequent cause; it was present in 1,603 patients (45.8%), arthritis was next in frequency being found in 502 patients (14.3%) and then postural strain in 478 (13.6%), sacro-iliac strain in 271 (7.7%), and protruded discs in 83 (2.3%). Congenital malformations of the lumbar spine were present in 1,108 of the 1,603 patients with lumbosacral strain, or 69.1%. It is interesting to note that Runge<sup>6</sup> in 1954, writing about pre-employment roentgenologic examinations, states that there were congenital defects in the lumbosacral spine in 25.4% of over 4,600 persons. These were not individuals with low back pain. Diveley and Oglevie<sup>7</sup> report a higher figure in employees with low back pain; namely, 31 per

cent of 3,587 persons. It is felt by many that the congenital anomalies, such as spina bifida occulta, sacralization of the fifth lumbar, elongation of the transverse process of the fifth lumbar, etc., predispose to instability of the back leading to low back pain and disability. However, in a comparative study of congenital anomalies between 200 persons with and 200 persons without back symptoms, Wilkins, Shilling and Schowalter<sup>8</sup> showed the bony changes about equal.

There is no doubt that poor posture is an etiologic factor in a great deal of low back pain being more common in women than in men. The most frequent point of pain for a postural backache is in the lower lumbar spine between L 4 and L 5<sup>9</sup> and usually follows weight bearing and activity. Most low backache, however, starts as a result of lifting or twisting which causes a stretching or tearing of ligamentous structures; some of these may be due to muscle injury and not involve ligaments. Wilson and Wilson<sup>10</sup> report that trauma, usually from a flexion and rotation of the spine, preceded the back pain in 664 (59.1%) of 1,163 industrial cases over a five-year period.

Some say that the greatest single cause of low back pain is compression or irritation of nerve roots due to (1) pathology in an intervertebral disc and (2) abnormal anatomic structures, such as a congenital or developmental defect.<sup>11</sup> However, in recent years one cannot but wonder whether undue emphasis has not been placed upon the intervertebral disc syndrome as a primary cause of low back pain. In the Armed Forces in 1943 it was found that approximately 10 per cent of the low back cases were due to intervertebral disc pathology which is to be compared to 13 per cent from a large civilian clinic.

The old term "lumbago"<sup>12</sup> is now coming back into use. It is defined as a pain in the back, abrupt in onset, severe and crippling, but of short duration attributed to trauma, often with injury to muscle or ligaments. It is my feeling that perhaps lumbago so de-

fined is more common than most physicians, particularly the young physicians, have believed it to be.

Primary instability of the lumbar vertebrae is given as a common cause of low back pain by Morgan and King.<sup>13</sup> In a series of 500 consecutive patients with lumbosacral pain, instability of the lumbar vertebrae was found in 143, or 28.6%. It is more common between L 4 and L 5 and is very often associated with congenital anomalies. Lumbar instability, the authors state, is an early sign of "incipient disc degeneration" occurring before narrowing of the disc space, sclerosis of the epiphyseal rings or osteophyte formation becomes evident. However, Mensor and Duvall<sup>14</sup> report that the absence of motion at the fourth and fifth lumbar levels as seen in flexion and extension roentgenograms is found in 15 per cent of normal persons and 43 per cent of those suffering with low back pain.

Other causes which should be mentioned are the boney spurs and bridges of osteoarthritis which are found in the spine so often in those over forty years of age; the occasional spinal cord and cauda equina tumor; and the malignant metastatic lesion, particularly from carcinoma of the breast.

### Diagnosis

For many years in the diagnosis of a low back condition, stress has been laid upon the flatness and stiffness of the lumbar spine, deviation of the spine from the midline, and the various special leg tests, such as straight leg raising (the Lasegue Sign), etc. Straight leg raising causing pain in the region of a sacro-iliac joint has been thought by many to be pathognomonic for a sacro-iliac strain.

In an analysis of nearly 400 intervertebral disc cases with sciatic nerve radiation in 1951 by a research committee of the American Orthopaedic Association (I. W. Nachlas, Chairman),<sup>15</sup> it was found that there was lateral deviation of the spine in 91 per cent, flattening of the lumbar spine in 87 per cent, restricted motion of the lumbar

spine in 97 per cent, and straight leg raising limitation in 95 per cent. The ankle jerk was normal in 38 per cent, diminished in 37 per cent and completely lost in 28 per cent. Exaggeration of the pain on coughing and sneezing was found in 83 per cent. These signs and symptoms all must be carefully considered in making a diagnosis of intervertebral disc pathology.

In most clinics today myelography is only used in the diagnosis of an intervertebral disc lesion when surgery has been definitely decided upon. The myelogram usually assists in a more accurate localization of the lesion.

In the last war low back pain and backache were frequently the commonest causes of hospitalization on a military orthopaedic service. It usually followed minimal injury while the soldier or sailor was on duty; the degree of pain and whether this was being exaggerated was always problematical. It was found very often that when two back patients were in adjacent beds, one with mild symptoms and the other with supposedly severe symptoms, the one with mild symptoms would have a gradual increase in the severity of his symptoms and would be a more difficult patient to treat. Unfortunately malingering is too frequently seen amongst patients with low back pain who are in the Armed Forces or who are industrial accident, compensation, or insurance cases. A great deal has been written on the psychogenic factor in low back conditions and musculo-skeletal disorders by Halliday<sup>15</sup> of England.

### Treatment

This is divided into conservative, manipulative and operative; however, the most important in this discussion for those in general practice is the conservative care. A general practitioner usually can carry out successfully conservative treatment for low back pain if certain basic principles are strictly adhered to.

1. *Conservative:* What does conservative treatment consist of?<sup>17</sup> First the patient

should be put to bed on a firm hard mattress, preferably with a board between the mattress and springs. The hips and knees should be moderately flexed and traction applied to the lower extremities (6 to 10 pounds to each extremity). Heat to the lower back should be applied constantly; this can be most easily obtained with the use of an electric pad. Massage to the muscles of the back and hips should be given once a day and special exercises for the back, hip, and abdominal muscles should be given twice a day when these can be tolerated. It is very often best to use alternate periods of traction rather than continuous traction. Codeine and aspirin, every four hours, when necessary for pain should be adequate. After a period of two or three weeks in bed, the patient may become ambulatory. On getting up the low back should be supported with adhesive strapping, a plaster cast or some type of back or corset brace. The patient should be instructed not to start activity too soon, but to remember that the muscles supporting his back have lost strength and the ligaments need time to heal. When activity is started, it should be gradually increased each day until activity is normal.

It has been said by Ghormley<sup>18</sup> of the Mayo Clinic that 80 to 90 per cent of patients with intervertebral disc pathology will be satisfactorily relieved by conservative management if this is used early, i.e., as soon as possible after the onset of the pain. Permanent relief from conservative treatment is obtained more often when the duration of symptoms is short and it is the first attack. In a report on 525 cases, Durbin<sup>19</sup> reports 123 cases treated by plaster casts with 24 per cent cured, i.e., no pain for two to ten years, 29 per cent relieved and 37 per cent not relieved. He states that the least relief from conservative treatment is obtained when the signs of nerve root pressure, such as diminished ankle jerk, hypoesthesia, and muscle hypotonicity, are present.

For the backache due to poor posture, exercises to strengthen the abdominals, glu-

teals and back muscles are indicated. A light back brace or corset support for a few months while the exercises are being taken might be advisable in some cases.

2. *Manipulation:* For some patients, particularly those with excessive muscle spasm and radiating pain who either have or have not had conservative therapy, manipulation may be indicated. Mensor<sup>20</sup> has reported satisfactory results with manipulation and conservative therapy in 64 per cent of his private patients and 45 per cent of his industrial patients. Manipulation is done by Mensor under anesthesia; the author believes this is not always necessary. If an anesthetic is not used, it is well to administer a muscle relaxant, such as Tolserol, before manipulation. Coyer and Curwen<sup>21</sup> report that manipulation without anesthesia resulted in improvement in 50 per cent of their cases within one week and 87 per cent within three weeks.

Manipulation is a procedure which the physician has not used as often as he should, resulting in patients seeking relief from the unethical practitioner, the basis of whose treatment is manipulation. G. Mosser Taylor<sup>22</sup> several years ago wrote, "The general practitioners in many instances have resigned themselves to a feeling of helplessness in this field" in the treatment of the back "and routinely refer these cases to the irregulars." Manipulation in itself is not difficult; there is nothing mysterious about it. It is primarily the stretching of the tight muscles and ligaments by passively putting the back and hips through full ranges of motion associated with a forced rotation of the lower back.

3. *Operative Procedures:* If the patient is not relieved by conservative treatment and/or manipulation, an operative procedure should be considered. Many soft tissue procedures have been done in the past, such as a myotomy of the piriformis muscle or a fasciotomy of the tensor fasciae femoris, but these seldom now are performed. Arthrodesis of the lower lumbar and lumbosacral spines and removal of intervertebral discs

or protrusions of discs are the most common surgical procedures used today.

If a lesion of a lumbar intervertebral disc has been definitely diagnosed and conservative treatment has proven unsatisfactory, a disc operation should be considered. However it should be pointed out that the enthusiasm for the removal of discs is definitely less than it was a few years ago except for the removal of the thoracic and cervical discs. This is primarily because of the large number of disappointing results in many clinics, some of which are due to premature operations or to performing surgery when it was not definitely indicated. Whether the spine should be fused at the time of the disc operation long has been a debatable question with most orthopaedists favoring fusion and the neurosurgeons believing fusion to be seldom indicated. Halford Hallock<sup>23</sup> of the New York Orthopaedic Hospital several years ago wrote about fusion and intervertebral discs as follows: "If mechanical defects already are present between L 4 and L 5 or L 5 and S 1, fusion should be combined with the excision of the disc, unless the general condition of the patient makes the longer combined procedure inadvisable. However in the absence of previous back pain and when the symptoms are purely nerve root in origin, fusion may be omitted if the roentgenograms fail to reveal any mechanical defect or weakening anomaly." This is excellent advice.

Following a very careful follow-up of 115 patients who had had disc operations at Washington University Hospital in St. Louis, Reynolds, McGinnis and Morgan<sup>24</sup> recommended that where conservative treatment fails and after careful study exploration reveals only a degenerative disc, spine fusion should be done. If at operation there is definite nerve root compression, simple disc excision may be adequate. When the original operation fails or the patient has a recurrence, fusion should be part of the secondary operative procedure. In a report on 450 cases from this same clinic the results were considered good in 82 per cent,

fair in 6.9 per cent, poor in 11.1 per cent. These percentages are fairly typical of what is being obtained in most clinics in the United States today. It is interesting in this report that it is stated the operation was not indicated in twenty-eight cases because twenty-one had degeneration of the disc without rupture, six had functional disturbances and one had rheumatoid spondylitis. In 1960 Lausche and Ford<sup>25</sup> of Washington University reported on the correlation of the myelogram with the clinical and operative findings in lumbar disc lesions; they found that in 662 of 866 cases (76.4%) the myelogram findings were confirmed at surgery.

Other conditions causing low back pain, such as spondylolisthesis, are special problems. Sometimes the pain, which is in the low back and often down the backs of both legs, can be relieved with a firm back brace. However most of these conditions require a fusion of L 5 to the sacrum. Bosworth and associates<sup>26</sup> in 1955 report complete relief of symptoms in 89 per cent of 115 patients following fusion.

Another cause of low back pain is a painful coccyx, or coccygodynia. This is very often associated with a psychogenic factor. Pyper<sup>27</sup> reported in 1957 removing the coccyx in twenty-eight patients in ten years. He stated that the operation is likely to provide a cure in 45 per cent and give worthwhile relief in another 45 per cent. He stresses the point that great care should be taken to eliminate from surgery the psychoneurotic patient.

The herniations of fascial fat and episcroiliac lipomas may occasionally be the cause of low back pain and also may give referred pain to the lower extremity. Local injections of procaine may give temporary or complete relief; however if they do not, excision of this mass is indicated. If relief is obtained from injections of procaine, it is quite likely that following excision there will be no further recurrence of symptoms.

### Conclusion

In concluding the remarks on low back

pain from the orthopaedic aspect, your speaker would like to say that backache, and particularly low back pain, is such a common cause for a patient to visit the doctor's office that it should be the responsibility of every physician in general practice to prepare himself with as much information as possible concerning etiology, diagnosis and treatment of back conditions. A few guide lines and directions to the patient in the beginning, concerning what should be done and the physician seeing that these directions are carried out, may save an untold amount of pain, disability, loss of time from employment as well as money. The real and basic reason why so many of the medical cultists are able to exist is because we as physicians are not doing as many of the simple forms of treatment to relieve aches and pains of the back as we should. More attention being paid to doing what should be done at the time of the first evidence of pain and disability is the best means we have to prevent an acute back from becoming a chronic back disability, and also the best deterrent we have for discouraging a patient with a back disability from going to an unethical practitioner, with the doctor losing both patient and prestige.

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### Are You Losing Your Hair?

Baldness among males has been such a common thing for so many years that most men accept it as inevitable and try not to worry much about it. But in recent years dermatologists have reported a steady increase in women patients whose hair is thinning and falling out. Why? The reasons are obscure. Some blame cheap hair dyes and ponytail hair styles, while others believe emotional upsets or air pollution are involved. Pregnancy sometimes causes loss of hair, but it almost always grows back. Improper use of home permanents may play a part.

An article in Today's Health, the magazine of the American Medical Association, points out a few facts that every girl and woman should know regarding hair care. Remember that hair loss often isn't permanent, and, in general, observe a few simple rules to help keep the hair normal and healthy.

—Good general health is most important. Keep fit, get enough sleep and eat a balanced diet.

—Brush moderately, forgetting about the old rule of 100 strokes daily, unless you have long, thick hair.

—Shampoo regularly, once a week for most women, oftener if your hair is oily.

—Don't dry your hair by rubbing briskly with a towel. Use a dryer, but avoid overheating.

—If you have dry hair, shampoo less frequently and avoid bleaches. Use permanent waves less often.

—Don't comb your hair constantly through the day. Avoid the ponytail style. It pulls your hair out.

—If your hair is falling out more than normally, tell your hair dresser and ask him to be gentle.

—Don't be misled by claims for creams, tonics, medications, which purport to grow hair. They can't.

—If hair loss increases, don't panic. It often is temporary. If there is a definite thinning, consult a dermatologist. He might be able to help.

# Gastrogenous (Achlorhydric) Diarrhea

## Fact or Fiction?

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*A review of the literature does not produce evidence to indicate that chronic diarrhea is caused by or associated with achlorhydria or gastritis.*

GASTROGENOUS DIARRHEA attributed to achlorhydria was first introduced by Einhorn<sup>1</sup> in 1898, and, to judge from the literature, enjoyed considerable popularity as a diagnostic entity which responded to oral dilute hydrochloric acid. Yet, over the past decade or two, there has been increasing reluctance to accept such a diagnosis, and doubt has been cast on the efficacy of its therapy.

The early description of the diarrhea ascribed to this deficit was of the passage of several mushy stools, usually on arising and after meals, but not associated with cramping or tenesmus, although some reports associated flatulence, dyspepsia and nervousness, especially in women.<sup>2,3</sup>

The rationale of this disorder is that hydrochloric acid softens the cellulose capsules of vegetables cells and permits digestion of its starchy content, at the same time inhibiting growth of bacteria in the upper reaches of the gastro-intestinal tract. The lack of hydrochloric acid permits escape of the vege-

table cells from digestion and absorption, supplying substrate for the overgrowth of bacteria which by fermentative activity produce organic acids from the carbohydrate in quantities sufficient to stimulate the diarrhea described.<sup>4</sup>

Bockus et al<sup>5</sup> studied 210 achlorhydrics, 21 of whom complained of intermittent diarrhea, which responded to acid or gastritis therapy. It is of interest that constipation was three and a half times more common in this group than diarrhea, and that the author observed that, "apparently achlorhydria is not any more frequent in colitis than in a similar group of normal individuals of the same age and sex." It is important to note that the achlorhydria in these cases was determined by the lack of free hydrochloric acid two hours after an Ewald test meal, a criterion which is not acceptable today.<sup>6</sup>

Kalser et al,<sup>7</sup> studying functional diarrhea, found seven of 58 patients to be achlorhydric to the Ewald test meal, an incidence of 12 per cent as compared with a five per cent incidence in a control group of 22. All of these seven patients were women between the ages of 31 and 57 years. They concluded that "achlorhydria is certainly not a major factor in functional diarrheas. However, a low acidity or achlorhydria was somewhat more frequent in patients with functional diarrhea than in the control group." I suspect that the statistical significance of the small numbers quoted here has no more reliability than the test employed to determine the achlorhydria.

The presence of achylia gastrica in patients with pernicious anemia would be expected to present a significant number of

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patients with this syndrome; in fact Wintrrobe<sup>8</sup> states that a history of diarrhea can be elicited in approximately 50 per cent of cases. However, he states that there is nothing to be gained from the administration of hydrochloric acid in pernicious anemia unless the gastro-intestinal complaints fail to be relieved by vitamin B<sub>12</sub> therapy. A review of current text books and articles shows no mention of the use of acid in the therapy of pernicious anemia. The possibility that the diarrhea observed by Wintrrobe is due to a neuropathy comparable to that described in diabetes mellitus has not been elucidated.

The term gastrogenous diarrhea has also been employed to describe that diarrhea associated with gastritis and the surgically altered stomach. Schindler<sup>9</sup> studied 200 cases of gastritis and found achlorhydria in 12 per cent of patients with atrophic gastritis, 8.5 per cent of those with superficial gastritis and none of those with hypertrophic gastritis. He makes no mention of diarrhea in these cases. Wood and Taft,<sup>10</sup> discussing chronic atrophic gastritis, state: "although hypochlorhydria or achlorhydria is the rule, attacks of diarrhea are rare.", and, "hydrochloric acid taken with their meals may produce relief, but in our experience most patients claim they receive no benefit or are made worse—they usually prefer alkaline powder." Doig and Wood<sup>11</sup> make no mention of diarrhea as a symptom of gastritis, but state: "it is frequently reported that acid is of value in the treatment of gastritis or the patient with achlorhydria; we have on occasion tried it, but have not been impressed with the results."

The occurrence of diarrhea following operative procedures on the stomach designed to reduce or eliminate its acid production, cannot be ascribed with certainty to the consequent reduction in hydrochloric acid in view of the anastomotic short circuit which is introduced and the not infrequent development of the dumping syndrome. In any event, the incidence of diarrhea is quite

low. Kiefer<sup>12</sup> reporting on a follow up of 546 patients 10 or more years after subtotal gastrectomy, found only nine patients with diarrhea. The author<sup>13</sup> found only three cases of diarrhea in 74 patients following the same procedure, all of whom had dumping symptoms. MacLean<sup>14</sup> reviewed 1550 patients following subtotal gastrectomy and found 13 patients with megaloblastic anemia, five of whom had diarrhea.

Brain and Stammers<sup>15</sup> reporting on 35 cases of total gastric resection found that diarrhea was invariably present in the early stages post-operatively, but was not a distressing symptom and subsided to one or two stools daily after three months. Pontes<sup>16</sup> reported a similar experience.

Review of the literature related to chronic diarrhea reveals a striking dearth of references to achlorhydric diarrhea.<sup>17</sup> Capper<sup>2</sup> states: "various writers have described diarrhea as secondary to achlorhydria but it is certainly not common." Palmer (E. D.)<sup>18</sup> says: "gastrogenous diarrhea a common diagnosis of the past, said to be due to achlorhydria, probably is not a valid entity, although every once in a while one encounters a patient who seems to demonstrate the phenomenon". Palmer (W. L.)<sup>19</sup> states: "the term gastrogenous diarrhea, referring to diarrhea with achlorhydria, is not appropriate, for there is no satisfactory proof that the diarrhea is related to the achlorhydria." Rappaport<sup>20</sup> observes that of 282 cases of chronic diarrhea from non-organic causes only 13 had an acidity, and only one of these responded to long-term therapy with acid. He comments on patients who have been taking acid for prolonged periods with apparent symptomatic relief, some of whom may be demonstrated to have normal acid secretion, while others with proven achlorhydria were receiving acid in doses "so far below a therapeutic level as to discount the likelihood that any benefit was derived from the medication."

The association of achlorhydria and gastric cancer has long been recognized. Much

has been written about the desirability of early diagnosis of gastric cancer in order to afford the patient the opportunity of curative surgery. Early diagnostic clues have been avidly sought, and the only contributions to date have been the recognition of a relatively high incidence in certain families, in patients with pernicious anemia and in those with achlorhydria or hypochlorhydria.<sup>21</sup> Yet in this search for early cases no stress is laid upon the supposed association between achlorhydria and chronic diarrhea. It seems reasonable to assume that if gastrogenous diarrhea due to achlorhydria is a clinical entity, then it should present itself in a significant number of cases who will ultimately develop gastric carcinoma. Hitchcock et al<sup>22</sup> reporting a 10 year study of 1747 patients over the age of 50 with achlorhydria, hypochlorhydria and pernicious anemia, make no mention of diarrhea. It would appear that this significant relationship either does not occur or has been overlooked by these workers.

The incidence of an acidity has been shown to rise progressively with age. Bloomfield and Pollard<sup>23</sup> report such a rising incidence from five per cent in the 20's, to 24 per cent in the 50's and 35 per cent or more in those over 60 years of age. Wirts<sup>21</sup> found less than 15 per cent of patients under 60 to be achlorhydric, and 20 per cent over the age of 60. It would seem likely then that chronic diarrhea due to this deficiency should rise with age. No such observation has apparently been made, in fact, constipation would more likely parallel the trend than diarrhea.

## Discussion

It appears extremely unlikely, in the light of these observations, that gastrogenous diarrhea due to achlorhydria or gastritis exists as a clinical entity. Its early description can, no doubt, be ascribed to poorly controlled observations and faulty methods of determining achlorhydria.

It is well to recall that a very high inci-

dence of functional diarrhea results from psychogenic disorders of the gastro-intestinal function, and that many, if not all patients, so afflicted will respond temporarily to any therapy in the hands of a kind and sympathetic physician. Rappaport<sup>20</sup> stresses the inefficacy of acid therapy, which becomes apparent only if the patient is observed over a long period, since many of those who obtain initial relief later recur even while maintaining their original dosage.

Unless more reliable evidence is forthcoming the concept should be discarded and the term gastrogenous diarrhea reserved to describe that diarrhea which occurs following gastric surgery.

## Summary

The literature related to gastrogenous diarrhea attributed to achlorhydria and gastritis is reviewed and little evidence found to support such a causal relationship.

It is recommended that the term gastrogenous diarrhea be reserved for description of the diarrhea which occasionally follows gastric surgery.

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### Let 'Mature' Child Make Decisions

Letting a child make his own decisions will train him to become a well disciplined adult. This is the advice of Dr. Frank Howard Richardson, Black Mountain, N.C., author and former consultant, New York Department of Health, writing in the February Today's Health magazine, published by the American Medical Association.

When the parents are convinced that the child is mature enough to act sensibly, he should be permitted to make his own decisions, and this point is reached earlier than is usually realized.

It is "most important" that adolescents make their own decisions. Although the adolescent knows he is dependent upon his parents, the youngster wants to direct his own life. Points of difference between the parents and child should be discussed frankly

and freely, and the parents must be open-minded. "If his decision does not seem reasonable to the parents' mature judgment, it is their duty to veto it, tactfully but very firmly." "For as long as they are supporting him and are legally as well as morally responsible for his action, it is their say-so, not his, that must be the decisive verdict."

Such a policy is not easy to administer, but it is so much more satisfying to both parents and young people that it is well worth the necessary effort. "For they [the children] will have learned to make decisions. But they will have learned as well that their decisions are always subject to some higher court.

"The well disciplined adult is never absolutely free to make decisions. But he has learned to make most of his decisions wisely."

# Urinary Tract Infections in Children

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*Urinary tract infections often go unrecognized, especially in children, and these infections are potentially dangerous. Methods for their early detection are discussed.*

“OF ALL INFECTIOUS DISEASES, among the most frequently undiagnosed and the most difficult to manage are pyelonephritis and related urinary tract infections.”<sup>1</sup> Keefer<sup>2</sup> has stated “. . . pyelonephritis whether acute or chronic, active or healed or healing, is the number one problem in infectious disease due to bacteria today, and demands continuing attention and intensive study . . . it is a problem calling for a high priority of investigation.” In children, infections of the urinary tract are second only to infections of the respiratory tract and gastroenteritis in frequency and therefore represent a very common pediatric problem. In most cases the infection involves the kidney substance (pyelonephritis). In recurrent or chronic pyelonephritis, infections are usually superimposed on a congenital anatomic defect, and functional damage often results. Because of the seriousness of the consequences of untreated urinary tract infections, early diagnosis is imperative, particularly where there is an

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associated urinary tract anomaly and infections tend to persist.<sup>3</sup> Yet, despite the importance of the disease, 70-80% of active pyelonephritis is undiagnosed clinically, and major fulminant pyelonephritis goes undiagnosed as often as does minor focal disease.<sup>4</sup>

The major difficulty in making a diagnosis of urinary tract disease is the frequent lack of symptoms. The classic case of acute pyelonephritis with fever, flank pain and tenderness, dysuria and pyuria, seldom presents difficulty in diagnosis.<sup>5</sup> However these signs and symptoms frequently may be absent. Even pyuria, usually considered the hallmark of urinary tract infection is frequently absent. Often the signs and symptoms are vague and variable.

In the absence of localizing clinical signs and symptoms the diagnosis should be suspected in:

- (a) acute illness of girls of diaper age,
- (b) any undiagnosed febrile illness,
- (c) unexplained malnutrition or failure to grow,
- (d) unexplained anemia,
- (e) unexplained abdominal pain or G.I. distress.<sup>6</sup>

Because the localizing clinical signs of infection in the urinary tract are absent too commonly to be relied upon for a diagnosis, and because pyuria, the usual indication of infection, may be absent in the presence of infection, other reliable indications of infection must be utilized. Numerous studies have shown that the most reliable indication of infection of the urinary tract is obtained by finding bacteria in the urine in significant numbers.<sup>3</sup>

Effective treatment of pyelonephritis is in large part dependent on the early detection of the disease. In untreated pyelo-

nephritis the possible ultimate mortality is 2-20%.<sup>6</sup> Antibacterial treatment produces bacteriologic cure in 95% of cases of acute, uncomplicated pyelonephritis, in which *E. coli* is usually the causative organism. On the other hand, the incidence of bacteriologic cure in chronic or complicated pyelonephritis, in which organisms such as aerobacter, proteus and pseudomonas are found is only about 10-20%.<sup>4</sup> The longer the infection persists in interstitial tissue, the more dense avascular fibrosis tissue is deposited as a formidable obstacle to drugs and phagocytic cells, and the more difficult becomes eradication of the infection.<sup>7</sup> The natural course of pyelonephritis has been frequently described as a series of separate episodes of infection. At present, evidence suggests that it is a disease continuum, and that in many cases the episodes of acute infection are linked by an asymptomatic but active infection that is constantly taking its toll of renal function. The initial event in the relentless course of chronic pyelonephritis may occur during childhood.<sup>1</sup> It therefore behooves all physicians to utilize the most sensitive techniques for the detection of urinary tract infections, especially in cases where the diagnosis is not readily apparent.

### Correlation Of Infection And Bacteriuria

The relationship between pyelonephritis and bacterial counts in the urine has been studied by autopsy and epidemiologic techniques. These indicate that there is a definite association between bacteriuria and pyelonephritis in the otherwise asymptomatic patient. MacDonald et al<sup>8</sup> investigated the relation between bacteriuria and pyelonephritis in a study of the bladder urine in autopsies. Culture counts of the bladder urine were performed in 100 unselected autopsies, and the bacterial counts were correlated with the pathological data. Forty percent of the urines obtained at autopsy by needle aspiration of the bladder contained more than 100,000 bacteria per ml. Fifty-three percent of the urines contained no

bacteria, and seven percent contained between 10,000 and 100,000 bacteria per ml. Active pyelonephritis was found in 14 of the 40 patients with 100,000 or more bacteria per ml. of urine (who were considered to have true bacteriuria), and was present in but three of sixty patients with no or relatively few bacteria. Three cases of acute cystitis without pyelonephritis were encountered; all were associated with 100,000 or more bacteria. Healed pyelonephritis occurred in eighteen percent of patients, and the prevalence of this lesion bore no relation to that of bacteriuria. A total of thirty-three percent of the patients gave evidence of active or healed pyelonephritis. It is especially noteworthy that a clinical diagnosis of active infection of the urinary tract was not made in seventy percent of the cases in which active pyelonephritis was found at autopsy. In many patients in which the diagnosis was not suspected, extensive pyelonephritis, sufficient to be a major cause of death, was present. MacDonald et al concluded that it is prudent to regard each case of bacteriuria as being associated with or likely to become active pyelonephritis, and to manage it accordingly.

Kunin et al<sup>9</sup> have recently studied the epidemiology of urinary tract infections in school children. This study was initiated to determine the usefulness of the quantitative bacterial culture in school children, to ascertain the frequency of age, sex and race distribution of such infections and to provide a group of asymptomatic, infected children who might be followed in a study of the natural history of the disease. Out of 1647 males tested, none was found to have urinary tract infections. Of 1410 girls, 15 were found to have urinary tract infections. Later it was found that two of the infected girls were known to have had a urinary tract infection previously treated with courses of antimicrobial therapy. The overall occurrence rate in girls was 1%. Thirteen of the fifteen children with significant bacteriuria, on careful questioning, gave a

history suggestive of urinary tract infection, but symptoms had not been of sufficient intensity to cause them to seek medical aid. After urological examinations, two of the infected children were found to have abnormal IVP's and five were found to have abnormal cystograms. In this study, a quantitative bacterial count of 100,000 or greater was considered indicative of infection.

From these two studies it is apparent that the prevalence of urinary tract infections is much higher than is generally supposed, and that many of the infections will remain undetected unless actively sought.

### Diagnostic Methods

The usual laboratory indication of urinary tract infection is the finding of pus in the urine. However, the importance of pyuria has been exaggerated. Pyuria is usually defined as the presence of five or more white cells per high power field, using a centrifuged specimen of urine. Pyuria, defined this way, occurs in  $\frac{1}{3}$  to  $\frac{1}{2}$  of patients with true bacteriuria, but occurs in only two percent of those with less than 100,000 bacteria per ml. of urine.<sup>10</sup> Although so called "sterile pyuria" is uncommon, it may occur in:

- (a) extreme dehydration of pyloric obstruction, decreased fluid intake, or acute toxemia,
- (b) trauma secondary to instrumentation or calculi,
- (c) when infection has disappeared but an irritating agent remains,
- (d) in chemical inflammation,
- (e) in acute glomerulonephritis,
- (f) contamination from the perineum when vaginitis is present.

Thus, pyuria by itself is not indicative of urinary tract infection.<sup>11</sup>

The culture of bacteria from the urine now is considered the most reliable means of detecting urinary tract infection provided a distinction between contamination and true bacteriuria is made. The fact that

contamination of urine by even a few bacteria may result in appreciable growth in a liquid medium makes quantitation of the bacterial content of urine mandatory.<sup>5</sup> When bacteria are being discharged from the kidney or have gained entry into the urinary tract in some other way, they usually multiply to a number exceeding 100,000 colonies per ml. of urine. When the urine is contaminated during passage through the urethra or along surrounding structures, the number of colonies obtained usually does not exceed 10,000 per ml.<sup>4</sup> Occasionally the bacterial count may be low in the patient with clinical evidence of urinary tract infection. This may occur when:

- (a) the rate of urine flow is rapid and the number of bacteria discharged per ml. of urine is small,
- (b) the pH of the urine is below 5.0 and the specific gravity is below 1.003,
- (c) a bacteriostatic agent is in the urine,
- (d) there is complete obstruction of a ureter preventing entrance of organisms into the bladder.<sup>11</sup>

An uncontaminated specimen of urine may be obtained without the use of the catheter. Pryles and Steg<sup>12</sup> have noted a 96.5% correlation between catherized and clean-voided specimens obtained at an interval of one hour. When a girl is prepared as carefully as for catheterization, clean voided specimens accurately reveal urinary tract infection. The clean voided specimen is obtained by scrubbing the perineum for two to three minutes with pHisoHex®, then the vulva. Washing is repeated with fresh 1:1000 aqueous Zephran®. After the child voids a few ml. of urine a sterile container is placed in the path of the stream. Specimens should be studied within two hours or stored in a refrigerator not longer than 24 hours.

The introduction of the clean voided urine specimen as a source of material for culture has eliminated the danger of iatrogenic infection inherent in catheterization as well as any attendant psychic trauma. The chance of producing infection by a single

catheterization is reported to be between 3-6%.<sup>10</sup> In spite of the risk of introducing bacteria into the bladder, catheterization is necessary when:

- (a) urinary retention exists,
- (b) repeated clean voided specimens yield borderline results,
- (c) immediate antimicrobial therapy is needed in an acutely ill patient, and there is not time for multiple specimens to be obtained,
- (d) the patient is unable or unwilling to cooperate.<sup>11</sup>

Once the urine specimen is obtained the technique for quantitative culture is relatively simple. In the method recommended by Kunin et al,<sup>9</sup> urine is diluted approximately 1:100 with 0.85% NaCl solution, 0.1 ml. of the dilute specimen is delivered to a petri dish and overlayed with trypticase soy agar. Plates are incubated at 37°C and read at 48 hours. The number of colonies present on the plate times 1000 represents the number of bacteria per ml. of urine.

As an alternate to the quantitative bacterial count, as an office or rapid screening procedure, the Gram-stain is a useful clinical guide to the presence of infection, and has been subjected to quantitative evaluation. Gram-stained smears of uncentrifuged urines are positive in 80% of counts of 100,000 or more and in 20% of counts between 100 and 100,000.<sup>10</sup> A loopful of fresh urine is smeared onto a glass slide, air dried, briefly fixed in a flame, and stained. If desired, a simple methylene blue stain will permit differentiation of rods from cocci and a rough estimate of the number of bacteria per ml. of urine. In either case, stained bacteria are readily seen without searching only when their number exceeds 100,000 per ml.<sup>7</sup>

### Discussion And Conclusions

With recognition of the high incidence of pyelonephritis and awareness of the sequelae of untreated or inadequately treated urinary tract infection, physicians can no

longer be complacent about urinary tract disease. Vigorous attention to detection and adequate treatment of urinary tract infections are mandatory. Not only should the child be treated until the urine is pus free, but she should be treated until bacteriuria is absent. Then, periodic examination of the urine to detect recurrences of bacteriuria should be done. In addition, urologic studies for complete evaluation of the urinary tract are indicated when a girl presents with a urinary tract infection two or more times or there is a failure of appropriate antimicrobial therapy to clear an infection. In boys, although the prevalence of urinary tract infection is less than in girls, infections are more frequently associated with congenital abnormalities and a complete urological study is indicated when any urinary tract infection is present.<sup>13</sup>

Pylonephritis now should be approached as a preventable disease. Kunin<sup>14</sup> has summarized the advances which have made this possible:

- (a) the recognition of the importance of pyelonephritis as a major cause of renal failure;
- (b) the introduction of the quantitative bacterial count, combined with the clean voided urine specimen, to provide a sensitive indication of urinary tract infections;
- (c) the availability of antimicrobial therapy;
- (d) the growing awareness on the part of physicians of the need to search diligently for structural or functional defects of urethra, bladder and ureters in patients with urinary tract infections;
- (e) the delineation of the role of instrumentation of the urinary tract in producing infection and the means by which such trauma may be avoided or best managed to minimize infection;
- (f) progress in the field of urologic

- surgery in technical advances in reparative surgery;
- (g) the epidemiologic approach to indicate the relative prevalence of subclinical infections;
- (h) the long range studies, now in progress, which will provide information relating the importance of subclinical infections to irreversible damage of kidneys, hypertension and complications of pregnancy.

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#### Weight Training

Training in lifting weights provides a wholesome activity for youngsters when practiced sensibly under good supervision, according to the Committee on Medical Aspects of Sports of the American Medical Association.

"There is no justification for weight lifting devoted to the development of muscles for the sake of muscles alone," a statement in the January 27th Journal of the American Medical Association said.

"Weight training, as it is coming to be known, is distinguished from weight lifting

in that it is developmental or rehabilitative in nature rather than competitive in terms of the poundage that can be lifted in various standardized lifts.

"Weight training is successfully used in physical education to strengthen underdeveloped persons, in physical therapy to aid recovery following injuries and operations, and for the conditioning of athletes."

As with any vigorous physical activity, a medical examination is a prerequisite, and periodic medical reevaluation at appropriate intervals is also recommended.

# The Ocular Aspects of Whiplash Injury

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*In addition to the obvious injury to the neck with its accompanying pain, the whiplash injury often causes ocular muscles palsies as well.*

SINCE THE TERM "whiplash injury" was first introduced by Gay and Abbott<sup>1</sup> the surgical as well as medico-legal aspects of this entity have been adequately described in the literature. There is general agreement that sufficiently severe whiplash injuries can result in temporary and permanent damage.<sup>4</sup> This has been described as: luxation and fracture of cervical vertebrae, fracture of the odontoid process, changes in the curvature of the cervical spine, tearing of neck ligaments, tearing of nerve roots, herniation of intervertebral discs and soft tissue hematomas. The frequent association of contusion of the brain with whiplash injury was stressed also by Gay and Abbott. Several authors have pointed out the high incidence of psycho-neurotic symptoms following mild whiplash injuries (Gay and Abbott,<sup>1</sup> Abbott,<sup>2</sup> and Gotten<sup>3</sup>). While this is true to a certain extent Schaeffers<sup>5</sup> warning not to see a potential malingeringer in every patient with a whiplash injury is well taken.

Middleton<sup>6</sup> in 1956 was first to describe ocular changes following whiplash injuries. The sympathetic chain is in a particularly

vulnerable position as it traverses the cervical region twice in an intra- and extra-spinal part. Pupillary symptoms in the form of unilateral mydriasis from sympathetic irritation or Horner's Syndrome from sympathetic palsy are well documented in the literature since Middleton's original report. The usually associated complaint of a slight decrease in visual acuity was thought to be the result of an anterior-posterior flattening of the lens as described by Cogan following sympathetic stimulation. Middleton suggested pupillography for the diagnosis of sympathetic involvement after whiplash injuries.

Not so well known is the fact that other ocular muscle changes may be caused by whiplash injuries. We have found only one report in the literature; G. W. Knight<sup>7</sup> in 1959 reported on the orthoptic treatment of accommodation-convergence anomalies following head injuries and stated that a number of the patients treated fall in the category of whiplash injury. During 1959 and 1960 we had the opportunity to examine several patients in our office following whiplash injuries:

1. A 28-year old white female was seen in consultation three days after a whiplash injury. She gave a history of diplopia and reading difficulties immediately following the injury. There was no loss of consciousness after the injury. An electroencephalogram done shortly after the injury showed no pathological anomalies. Eye examination was normal with the exception of a marked exophoria for near of 18 prism diopters and complete paralysis of convergence. Six weeks after the injury the exophoria was only 4 prisms diopters and the near point of convergence varied between 14 and 60

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cm. Monocular accommodation was  $3\frac{1}{2}$  diopters instead of the normal 6 to 8 diopters for the patient's age. Nine weeks after the injury the near point of convergence could be held at 15 cm. with great difficulty, but the accommodation was still reduced to 3 diopters. Orthoptic treatment was advised, but the patient did not have time to go through with this at the time.

2. A 58-year old white female was seen seven months after a car accident with whiplash injury. She was not unconscious after the injury and her only complaint was occasional diplopia and tearing of her eyes. Examination was normal with the exception of a convergence insufficiency; the near point of convergence was at 37.5 cm. There was also a stenosis of the nasal-lacrimal duct, but this was probably not a result of the injury. Convergence exercises were advised, but the patient preferred to delay those for the time being.

3. A 48-year old Negro was seen one month after an automobile whiplash injury. He had a history of having bloodshot eyes and difficulty reading, but no diplopia. Eye examination was essentially normal with the exception of a near point of convergence at 11 cm. Accommodation was decreased to less than  $1\frac{1}{2}$  diopters which would have corresponded to an approximate age of 55 years. Six weeks thereafter the convergence was improved to 10 cm. and accommodation was  $2\frac{1}{2}$  diopters, approximately corresponding to the age of the patient.

4. The case of a 29-year old white female is interesting because we have exact data before and after her injury. The patient was under observation and treatment since 1958 because of headaches. She had normal ocular findings with the exception of a convergence insufficiency with a near point of convergence of 30 cm. Under orthoptic clinic and home treatment the convergence insufficiency improved to 10 cm., but at times fluctuated. The accommodation was always  $8\frac{1}{2}$  diopters. In December, 1959, she had an auto accident with whiplash

injury, but was not unconscious. She was again seen two months following this injury with increased difficulties. The near point of convergence was 40 cm. and orthoptic treatment was tried, but was not successful. Accommodation was decreased to 3 to  $3\frac{1}{2}$  diopters. Since there was no improvement with orthoptic treatment, six months following the injury a resection of the left medial rectus muscle of 5 mm. was done. This improved the convergence to 12 to 15 cm. and the patient was almost free of symptoms.

5. A 20-year old white female was seen in consultation fourteen months after a whiplash injury. She was not unconscious following the injury. Difficulties were primarily headaches, watering and burning eyes. Examination was essentially negative except for an exophoria for near of 10 prism diopters. Convergence was possible to 8.5 cm. and increased after six months to  $7\frac{1}{2}$  cm. Orthoptic examination was not done and measurements of accommodation in this patient were not done. This case is certainly somewhat equivocal.

6. A 35-year old white male was seen two days after a whiplash injury. He complained of double vision. The examination was essentially negative with the exception of a slight palsy of the left superior rectus muscle with diplopia when looking up and to the left. During an observation period of six months this was essentially unchanged, subjectively and objectively. The last time the patient was seen he still had diplopia when looking to the left and up and also at times when looking to the left and down.

7. A 32-year old white female was seen three days after a car accident. She was in a car standing at an intersection and was rammed from behind by a truck and had a whiplash injury. She lost consciousness for almost 24 hours so that one can also assume a contusion of the brain. Eye examination was normal with the exception of a slight palsy of the right superior oblique muscle, causing diplopia when looking to the left

and down. This situation was unchanged for two months, but then the hypertropia decreased from 6 to 1½ diopters and the diplopia disappeared.

8. A 24-year old white female was seen in consultation two months after whiplash injury. Eye examination was normal with the exception of an exophoria for near of 6 prism diopters and a convergence of only 30 cm. Accommodation was with difficulty 7 prism diopters, but there was rapid tiring of accommodation on repeating the test and after three times, the accommodation was reduced to 3 diopters. During the relatively short time the patient was seen no improvement of her condition was observed.

9. A 32-year old white female was seen nine months after a whiplash injury. She wore a Queen Anne collar because of sprain of cervical ligaments. Examination showed a right central scotoma with reduced visual acuity of 20/100. The near point of convergence was at 17 cm., accommodation was zero and during an observation period of two months the condition was unchanged.

10. Another case was seen just recently, a 42-year old white female sustained a moderately severe whiplash injury. Her ocular examination revealed normal findings except for a near point of convergence of 16 cm. and weakening of accommodation to 2 diopters. No follow-up data are as yet available.

From the ten cases presented one can see that as sequelae of whiplash injury seven patients showed a complete or partial palsy of both accommodation and convergence. In one case this was temporary and in the other cases this was present for a period of more than six months. In two cases there was only a convergence insufficiency with normal accommodation and in another case a pre-existing convergence insufficiency was worsened to a degree to necessitate surgical intervention. In the same case the accommodation which was normal before the accident was decreased afterwards. Two other

cases showed isolated slight extra-ocular muscle palsies with diplopia, in one case temporary and in the other case of more than six months duration.

An attempt was made from the patient material of the Medical College of Virginia to draw conclusions as to the frequency of ocular symptoms following whiplash injuries; however, in checking 35 consecutive admissions at the Medical College of Virginia with a diagnosis of whiplash injury during the year 1960, only in one case were ocular changes noted. These consisted of a temporary monocular mydriasis with slight decrease in visual acuity, probably due to sympathetic stimulation. This patient had a neck hematoma.

Fatal whiplash injuries are relatively rare and so are autopsy reports of this entity. Richard Lindenberg of the Central Anatomic Laboratory of Baltimore in a personal communication reported that he has no case in his collection in which a whiplash injury has survived long enough to show unequivocal changes in the brain stem. In the few cases of fatal whiplash injury that come to autopsy at the medical examiner's office, a fracture or severe luxation of the cervical vertebrae occurred with subsequent sudden death. The resulting hemorrhages were restricted to the cervical cord. Because of this dearth of autopsy data one can only speculate on the etiology of the convergence, accommodation and extraocular muscle palsies. Already Seletz<sup>8</sup> has pointed out that a forceful extension or flexion of the neck can cause a partial or total obliteration of the vertebral artery. The topographical location of the vertebral artery limits considerably neck movement over and above the physiological permissible. Lewis and Coburn<sup>9</sup> also have seen an occlusion of the vertebral artery in a patient who had vertigo, diplopia and ataxia. One can assume as a working hypothesis that small hemorrhages or areas of encephalomalacia in the vicinity of the third, fourth or sixth nucleus are responsible for the ocular

changes. More recently Horwich<sup>10</sup> theorized that such hemorrhages are produced by a shearing effect of the branches of the basilar artery which are given off at right angles to supply the area of the oculomotor nucleus.

In regard to the therapy of ocular sequelae of whiplash injury, G. W. Knight<sup>7</sup> has seen improvement in a few cases with orthoptic treatment. The best treatment, however, would be prevention of these accidents. It is interesting in this regard that A. D. Ruedeman<sup>11</sup> in his publication, "Automobile Safety Device to Prevent Whiplash Injury", has described a headrest which could be screwed on to the back of an automobile seat which would surely prevent the forceful hyperextension of a whiplash injury. While this was produced by some car manufacturers for one year, it is probably due to the limited market appeal of such a device that it has disappeared from the list of optional equipment of present automobile manufacturers.

### Summary

Ten cases of ocular muscles palsies following whiplash injuries were reported. Disturbances of accommodation and convergence were most frequent. The majority of injuries were slight as evidenced by the absence of cerebral concussion. Possible ex-

planations for the ocular changes are discussed.

Since this paper was written, five more cases of accommodation convergence paralysis following whiplash injuries have been observed by the authors.

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### Scientists in Industry

Three decades ago most scientists looked down their noses at offers of research jobs in industry. Now, working in well-paid posts . . . some of the country's ablest bacteriologists, chemists, and pharmacologists have made possible the most imposing series of scientific developments ever compressed in such a short span of time. Thousands of

people are alive and well today who 10 years ago could have died without antibiotics, steroid hormones, and anticoagulants. Many of the one-time killers have been robbed of their terror by heavily-backed industrial research.—Marguerite Clark, medicine editor of *Newsweek*, in *Medicine Today*.

# Interesting Complication of Arterial Bypass Graft

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*An unusual complication of surgery on the common iliac artery, fatal in this case, is reported.*

THIS IS A SHORT PRESENTATION of an unusual complication occurring following a common iliac to common femoral bypass graft using the woven Teflon grafting material.

A 56-year-old patient was admitted to the Lynchburg General Hospital as an emergency on 12/22/59 because of massive lower G I bleeding. The patient was in rather deep shock but did respond to several emergency transfusions, and because of a fresh abdominal scar he was questioned regarding previous surgery. The patient was a traveling salesman who was stopping overnight in the city and staying at a local hotel.

The patient had been operated on previously at a University Hospital at which time he described an arterial operation for an obstructing plug on the "right vessel to his leg". A midline incision was all that was present and it was assumed he either had an endarterectomy of the right iliac and common femoral or some sort of bypass grafting procedure. The patient's wife was contacted as well as the hospital at which he was operated upon and this was confirmed. A right common iliac to right common femoral bypass graft for obstructive vascular disease had been performed six weeks prior to this time.

The patient continued to pass massive clots and bright red blood from the rectum, and a tentative diagnosis of a fistula between

the iliac or common femoral vessel and the cecum was made.

After the patient's blood pressure was raised to an acceptable level with rapid transfusions, he was explored through the same midline abdominal incision and the entire cecum was found to be tremendously distended with clots and fresh blood, and the Teflon graft was visible extending from the common iliac on the right to the common femoral on the same side. A fistula existed between the iliac end of the graft where apparently several of the sutures in the iliac artery had come loose or had broken. The cecum had plastered itself to the iliac artery in this region and eventually a perforation or fistula had occurred with resultant massive G I hemorrhage. The cecum was dissected free and because the Teflon graft was no longer functioning it was divided in the middle and the ends securely tied and suture ligatured. The point of fistula was then suture ligatured using atraumatic 4-0 silk between the vessel and the graft. This region was extremely difficult to work in because of the presence of dense scar tissue—the common iliac vessel itself being sheathed in a dense case of scar tissue.

The fistula in the cecum was closed using several inverting layers of interrupted catgut.

A second piece of Teflon was used to lay over the region of the fistula to prevent cecal adherence to the artery.

Postoperatively the patient did well except for ileus which gradually cleared. On the 14th postoperative day, the day of his discharge, he again had sudden massive G I hemorrhage and again emergency laparotomy was performed with a second fistula

found to be present in the cecum and in the distal ileum. This was again repaired but because of the extremely dense scar tissue and induration in this area clear identification of the common iliac and common femoral vessels was difficult. At this operation the entire common iliac and common femoral vessels were excised and a graft of Teflon used to reestablish continuity. Post-

The complication of aortic duodenal fistula following an abdominal aortic bifurcation aneurysm is well established since the duodenum comes to lie immediately over the anastomosis between the graft and the aorta. In such a case a fistula might exist between the aortic anastomotic site and the duodenum itself. However, the occurrence of a fistula into the cecum is rare, undoubt-

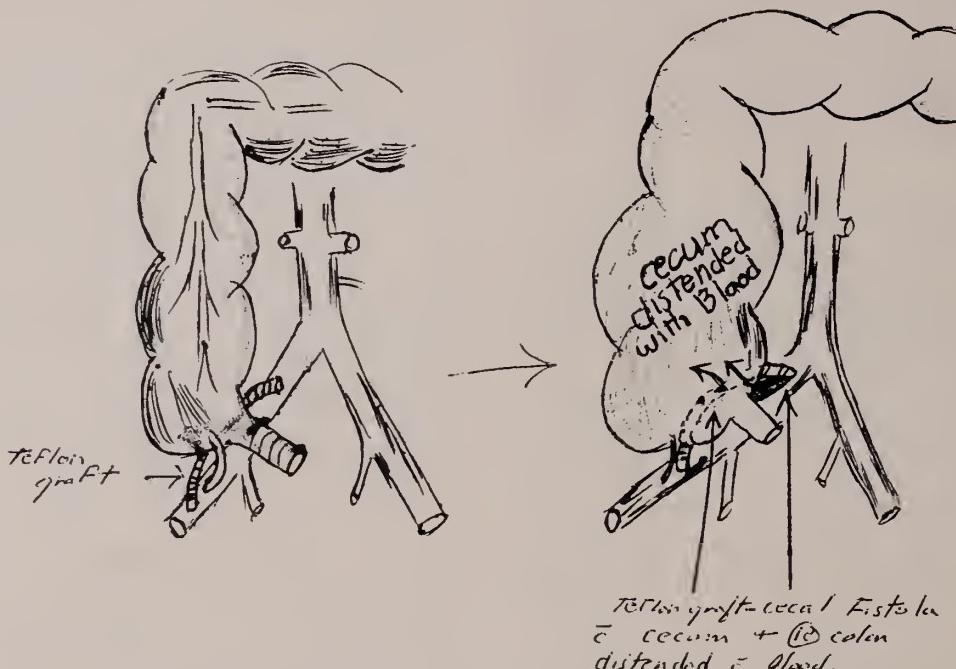


Diagram illustrating fistula between right common iliac and cecum.

operatively the patient went slowly downhill and because of an apparently poor runoff pattern in the femoral vessel in the right side with obstruction on into the superficial femoral and down into the leg, the graft clotted and the patient's foot slowly became cyanotic. The patient then developed an anuria and after approximately four days despite intensive antibiotics, supportive treatment with electrolyte studies, etc., he expired.

This case is presented as an interesting complication which is extremely unusual.

edly, because of the fact that the posterior peritoneum is usually closed following this procedure and the cecum itself does not come to lie in direct contact with the anastomotic line.

### Summary

An interesting case of iliac artery, cecal fistula with resultant massive lower G I hemorrhage is presented and briefly commented upon.

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# Resistant Rickets

## A Report of Three Cases

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*Although the etiology of this unusual disease is not known, it can be treated successfully.*

THIS PAPER is presented to discuss the cases of resistant rickets treated at the Medical College of Virginia and the Crippled Children's Hospital on the Orthopedic Service, also to consider the hereditary tendencies, etiology, diagnosis and treatment of this condition. Resistant rickets is a little understood syndrome whose clinical features are essentially indistinguishable from those of ordinary rickets, which are craniotabes, thoracic deformities, long bone bending deformities, coxa vara, normal or low calcium, low phosphorus and elevated alkaline phosphatase, but being different, in that this condition is present in the presence of adequate dosage of vitamin D (from five to ten thousand units of vitamin D per day). Radiologically, the cupping and fraying of the epiphysis and lipping of metaphyseal end of bones and cortical spurs are present at the end of long bones. In the mid-shaft area there is a coarse trabecular pattern, osteoporosis and a lamellated pattern, thickness of the cortex (Wolff's Law) and cloaking of the shaft with rarefied subperiosteal bone. This condition is transmitted by a dominant gene, all members of the family having the typical blood picture, but not necessarily the clinical aspects of the disease. The diagnosis is made by x-ray and blood

pictures in the presence of adequate doses of vitamin D. The basic pathology of this condition is a congenital defect in the renal transport of phosphorus. The healing of rickets is heralded by an increase in the calcium deposit in the zone of provisional calcification, the cupping and fraying disappear and there is increased evidence of deposition of lime salts. The final obliteration of the disease may take many months. As is known, ordinary rickets does not occur usually after eighteen months, thus if a child beyond this age persists with the above clinical manifestations, resistant rickets in varying degrees is probably present. Other conditions have to be ruled out, e.g., Fanconi Syndrome, renal rickets, hypophosphatasia and achondroplasia. The tests we use to make the diagnosis are blood calcium, phosphorus, alkaline phosphatase, x-rays, phosphate clearance, and usually the history of adequate doses of vitamin D in the first year or two of life.

The children, after the above studies were obtained, were started on vitamin D in the form of Drisdol, which is a vitamin D-2 preparation. We started these children on ten thousand units of vitamin D per day, then increased the dose to twenty-five thousand units then to fifty thousand units per day. Above this level, increments of fifty thousand units per day were used. Each dose was maintained for approximately three weeks, daily Sulkowich tests were done. X-rays and blood studies were obtained before the dosage was increased. All of the children studied had a normal or low calcium, low phosphorus, elevated alkaline phosphatase, the usual x-ray evidences of rickets, and a renal tubular reabsorption of phosphorus of about

This manuscript was written while Dr. Bowen was resident in Orthopedic Surgery at the Medical College of Virginia.

seventy to seventy-three per cent (normal is about ninety to ninety-three per cent). As was stated, we used a concentrated type of vitamin D-2, Drisdol, and found it to work very well, although other products have been used. We used this product because it was available in our pharmacy and was obtained easily. The action of vitamin D is to increase absorption of calcium and phosphorus across the upper small intestinal membrane; increase serum calcium by taking calcium from the bone, and in small doses causes increased excretion of phosphorus by the kidney by inhibiting the reabsorption of phosphorus by the distal convoluted tubules, whereas, larger doses of vitamin D cause decreased excretion of phosphorus by causing an increased reabsorption by the kidney tubules. The action of the parathyroid hormone plays a role in the etiology of resistant rickets. Its normal action is excretion of phosphorus at the kidney tubule level. It also has a direct effect upon bone, in that it causes absorption of calcium and phosphorus from bone; some believe by direct action, others by changing electrolyte balance of the immediate surrounding osseous fluid, and others by increased osteoclastic activity. Hess, about 1920, in his collected writings, spoke of persistent rickets. It was recognized that if a child over eighteen months of age persisted with the larger doses of vitamin D (cod liver oil) than was usually given, the child improved somewhat. Also, if phosphorus was given along with the cod liver oil, prompt and more certain healing of the rickets was noted. In 1921, Howland and Kramer formulated the product of calcium and phosphorus expressed in milligrams per cent; if the product was thirty or less, rickets was present. If the product was forty or more, rickets was not present or healing rickets was present. Thus, they expressed the importance of calcium and phosphorus in the diet, particularly of phosphorus. They contended that calcium deficiency in the serum cannot be looked upon as the primary rea-

son for failure of calcium deposition, but rickets was caused by a diet sufficient in calcium but poor in phosphorus. They concluded that the presence of a low inorganic phosphorus in the serum of a young child was nearly conclusive evidence of active rickets. The etiology of this condition is still unsettled as to whether or not the parathyroid glands are involved; whether or not this is an hereditary renal tubular defect in the reabsorption of phosphorus or involvement of the Krebs' cycle.

The term "resistant rickets" was first used by Dr. Albright in 1937. His experiment was with ordinary rickets, resistant rickets, and a normal individual. He showed that the bony defect was due to rickets in that giving the ordinary rickets patient five thousand units of vitamin D per day caused a decrease in the fecal calcium whereas in the resistant rickets patient there was no appreciable change. Dr. Albright's work was mainly concerned with the action of the parathyroid glands. He states that this gland is insensitive to the action of vitamin D except in large doses. In small doses there is hyperparathyroidism with a washing out (of the bone) of calcium and phosphorus. However, in large doses the calcium level is raised which causes a decreased activity in the parathyroid gland, thus a decrease in the secretion of phosphorus by the kidney, raising the level of phosphorus with the calcium and phosphorus both being raised, ossification of the bone then can take place to a supersaturation of the surrounding osseous tissue. To summarize, vitamin D causes increase in the serum calcium by increasing the absorption from the small intestine. It decreases parathyroid activity, decreases urinary secretion of phosphorus, and finally a rise in the serum phosphorus. To diverge, renal rickets was first described by Fletcher in 1911, this condition being different from resistant rickets in that there is an inability of the kidney, because of glomerular damage, to excrete phosphorus and other products of metabolism. The

phosphorus increases, causing a lowering of the serum calcium level, plus the basic ion, and calcium is used as a base to buffer the acid products which the kidney is unable to excrete. The high phosphorus level and the low calcium level stimulate the parathyroid gland causing a secondary hyperparathyroidism. The phosphorus is also excreted in the bowel, causing a calcium phosphate precipitate and tying up of the phosphorus and calcium so it cannot be absorbed. The diagnosis of renal rickets is made by the classical signs of rickets with the signs of renal damage.

Dr. Dent, in 1952, stated that resistant rickets is based on an hereditary defect by the kidney tubules for the reabsorption of phosphorus. He continues that the calcium level is usually normal or very slightly low whereas the phosphorus level is usually very low. The parathyroid glands play no active role in this condition because of the relatively normal serum calcium. The low serum phosphorus level is due to the hereditary defect in the distal renal tubules for the reabsorption of phosphorus by the kidney tubules. He classifies his findings into types—one and two (resistant rickets); the inability of the tubules to reabsorb phosphorus and/or phosphorus and glucose; three and four, the inability of the tubules to reabsorb phosphorus, glucose, amino acids and the above, plus water; five and six (Albright-Butler syndrome) renal tubular acidosis, the inability of the kidney to form ammonia, phosphate increase and also a decrease urine acidification. Thus, Dr. Dent believes that resistant rickets is an hereditary defect in reabsorption of the above mentioned products by the kidney tubules.

Dr. Ettore DeTonie, in 1959, stated that his theory of the Krebs' cycle was associated with the causation of resistant rickets. He continues that the calcification of bone depends upon the citric acid cycle. ATP and alkaline phosphatase come chiefly to play with the formation of the organic substances of the skeleton. He says the role of the

parathyroid gland in classical rickets is still uncertain. Cortisone acts as an antagonist to the action of vitamin D by impairing absorption of calcium from the intestinal tract, and by reducing the effect of vitamin D in its active roll at the renal tubular level. He placed considerable importance on the citric acid cycle in the renal tubules in connection with the regulation of the acid base balance, the reabsorption of phosphorus and glucose. The synthesis of steroids has its beginning in the Krebs' cycle, and it may interrupt the various stages of calcium and phosphorus metabolism. Likewise, the sensitivity and resistance of the organism to vitamin D and AT-10 are closer related to steroid metabolism and the Krebs' cycle in the renal tubules. Thus, the Krebs' cycle controls reabsorption of amino acids, glucose, phosphorus and regulates acid base balance. He presented a case of resistant rickets treated with ten thousand units of vitamin D per day for forty days with only mild improvement. The patient was then treated with five to ten milligrams daily of ATP for sixty days, with marked radiological improvement. He concluded that there appears to be a deficiency in the synthesis of ATP in vitamin D resistant rickets, a disturbance of steroid metabolism which may have some bearing on the action of vitamin D, and some relationship between metabolic disturbances and sensitivity and resistance to the antirachitic vitamin.

The cases to follow were treated as stated above. Beginning on ten thousand units of vitamin D per day, blood and x-ray studies, phosphorus excretion level, and daily Sul-kowich tests were done. During the initial treatment phase of increasing the level of vitamin D every three weeks, x-ray and blood studies were done. These children were treated with increased doses of vitamin D until the calcium serum level was 10.5 to 11 milligrams per cent, the phosphorus serum level was 4 to 6 milligrams per cent, alkaline phosphatase was 7 to 8 BL units; twenty-four hour urine calcium, 200 to

400 milligrams per cent; x-rays show changes compatible with healing rickets and percentage of reabsorption of phosphorus approached normal. After a dose of vitamin D was reached which met the above requirements as near as possible, x-rays were made every four months and blood studies were done monthly. Urine Sulkowich was done daily during the increasing doses of vitamin D and after the proper dose was obtained, this was done once weekly. One complication we had was hypercalcemia since in this condition the therapeutic and

### Prognosis

The prognosis is usually good, there is clinical evidence of improvement of gain of weight, increase in height and over-all general well-being.

As the rickets improves the dosage of vitamin D has to be decreased because smaller doses of vitamin D are required. About the time of puberty, sometimes the intake of vitamin D can be discontinued because the condition spontaneously improves about this age. On the other hand, the intake of vitamin D may have to be



Fig. 1

toxic levels of vitamin D are close. However, as improvement occurred, the doses could be reduced which we found to be very true. We have been very pleased with our results and the improvement that these children have shown.



Fig. 2

continued the rest of the individual's life. Of course, this can be determined by continuing the blood and x-ray studies.

### Case Reports

**Case No. 1, BR** (Fig. 1). A four-year seven-month old white female was first seen at the Crippled Children's Hospital in August, 1957, having been referred by another local hospital for severe bowing of the legs

and x-ray evidence of severe rickets. (Fig. 2) Blood calcium was 9.2 milligrams per cent, phosphorus 2.7 milligrams per cent, and alkaline phosphatase 10.2 BL units. She was started on ten thousand units of vitamin D per day in the form of Drisdol. At the same time, manual straightening of the legs was attempted with serial casting. This was done for one year until December, 1958. In February, 1959, bilateral femoral osteotomies were done and the dosage of vitamin D reduced to five thousand units per day.



Fig. 3

After healing of the femurs in approximately July, 1959, the dosage was increased to ten thousand units per day and in January, 1960, the dosage was increased by the above method stated previously to one hundred and fifty thousand units of vitamin D per day. The calcium rose to 10.2 milligrams per cent, phosphorus to 4.3 milligrams per cent, alkaline phosphatase 8.1 milligrams per cent. Her RTRP was 86 per cent in June, 1960—no previous one was done. Figures 3 and 4 represent this patient in June, 1960. She subsequently de-

veloped a little nausea and vomiting—an indication of hypercalcemia and the serum calcium was 12.1 milligrams per cent. The phosphorus and alkaline phosphatase were approximately the same. The dosage of vitamin D was decreased to fifty thousand units per day and the patient was subsequently discharged on this dosage to be followed by her local doctor. She was instructed to return to the Crippled Children's Hospital in two months for re-evaluation.



Fig. 4

*Case No. 2, AD.* A seven-year three-month old colored male who is the brother to Case No. 3. He was first seen by the orthopedic service in May, 1960, with clinical evidence of rickets. The calcium was 8.4 milligrams per cent, the phosphorus 2.3 milligrams per cent, and the alkaline phosphatase 35.2 BL units. X-rays revealed the

usual findings of rickets. (Fig. 5) RTRP was 66 per cent. The patient was started on ten thousand units of vitamin D per day by the above mentioned method, and was followed at monthly intervals with blood determination and x-rays. By October, 1960, the calcium was 9.6 milligrams per



Fig. 5

cent, phosphorus 5.6 milligrams per cent and alkaline phosphatase 7.3 milligrams per cent. RTRP was 83 per cent. The Sulkowich test ran one to two plus. Figure 6 shows x-ray evidence of improvement; clinically the patient was much improved.

*Case No. 3, MD.* A two-year one-month old colored female, sister to the above case, was seen in the orthopedic service at the same time as the above case, May, 1960. The calcium was 8.4 milligrams per cent, phosphorus 3.3 milligrams per cent, and alkaline phosphatase 33.2 BL units. RTRP was 73 per cent. Urine Sulkowich was one plus. She was started on ten thousand units of vitamin D daily and increased to twenty-five thousand units. In October, 1960, the calcium was 9.6 milligrams per cent, phosphorus 6.1 milligrams per cent, and alkaline phosphatase 8.4 BL units. RTRP was 86

per cent. The Sulkowich was two plus. Figure 7 represents x-rays taken five months later which revealed marked improvement and clinically the patient is much improved. These three cases are not the only ones which we have treated, but ones which give an idea as to the treatment, follow up, and care of



Fig. 6

this type patient. The others that we have treated required approximately ten thousand units of vitamin D per day which are obviously milder cases and do not need as frequent and careful follow up as the above described cases. We have seen none severer than Case No. 1.

### Conclusion

The etiology of this condition is still undetermined. However, the treatment for it is increasing doses of vitamin D and careful watching with blood and x-ray studies until puberty or the rest of the patient's life. Several facts to emphasize: (1) Resistant rickets is clinically like ordinary rickets except persistent in the presence of adequate doses of vitamin D. (2) Etiology is undetermined as to whether the parathyroid glands hereditary defect in renal tubules

or citric acid cycle is involved. (3) Differential diagnosis is made by blood and x-ray studies and urine studies to ruling out the

The twenty-four hour urine calcium is approximately 200 to 400 milligrams per cent. (5) Prognosis is followed by blood and

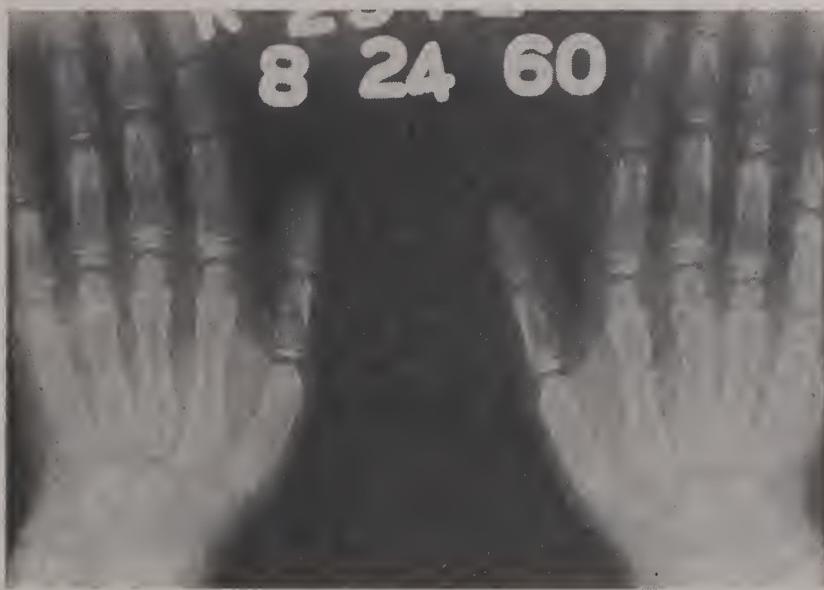


Fig. 7

Fanconi syndrome and achondroplasia. (4) Treatment is increasing doses of vitamin D until calcium is 10.5 to 11 milligrams per cent, phosphorus to 4.6 milligrams per cent, and alkaline phosphatase 7 to 8 BL units.

x-ray studies done periodically which may be discontinued at puberty or may have to be continued throughout the life of the patient.

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### Pharmaceutical Contributions to Medicine

Present indications are that in the sixties our growth will be even more fabulous than it was in the fifties and the forties. In that two-decade period more effective new drugs to prevent, diagnose and treat countless illnesses were discovered than in the entire period of recorded medical history. Do you realize that 80 per cent of the prescriptions now written could not have been prescribed 10 years ago, that 1 and  $\frac{1}{4}$  million Americans are alive today because of new treatments in the past 10 years, and that five years have been added to man's lifespan in the last few decades.—Leonard W. Larson, M. D., President, American Medical Association, to American Association of Medical Assistants.

# Gonadotropic (HCG) Treatment of Impotence

## Results of Therapy in 55 Cases

BEN SEID, M.D.  
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*The author reports very good results with the use of HCG in the treatment of impotence.*

IN A SERIES of 55 men complaining of loss of libido and sexual impotence, ranging in age from 20 to 65, a course of fortified chorionic gonadotropin\* injections provided highly satisfactory results. Every patient showed improvement by the fifth week. There were no side reactions.

Human chorionic gonadotropin (HCG) originates in the placenta and is recovered from the urine of pregnant women.<sup>1</sup> It provides potent stimulation of the Leydig's cells in the interstitial substance of the testicles, which secrete the androgenic hormones.<sup>1,2,3</sup>

The rationale of fortified chorionic gonadotropin depends upon the synergistic action of thiamine hydrochloride and glutamic acid in association with HCG.<sup>4</sup>

### Published Reports

The use of fortified chorionic gonadotropin has proved of great value in the treatment of impotence in young and middle-aged men. In a recent study<sup>5</sup> coitus was made possible in 85% of 67 cases of impotence following use of intramuscular in-

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\*The medication used was Glukor, furnished by Research Supplies, Albany, N. Y. It contains HCG (human chorionic gonadotropin) 200 i.u. per cc., fortified with thiamine hydrochloride 25 mg. and L (+) glutamic acid 52.5 ppm.

jections twice weekly. The treatment has proved most successful in increasing potency and libido, and also for relief of associated nervousness, depression, fatigability and insomnia.<sup>6</sup>

In a series of 120 cases of the male climacteric, fortified chorionic gonadotropin gave better, faster and safer results, without side effects, than testosterone.<sup>7</sup> Considerable improvement was noted in a series of 237 cases of male senility in the age range of 60 to 102.<sup>8</sup> The treatment has proved effective for patients over 40 suffering from premature fatigue, letdown and other conditions associated with gonadal decline.<sup>9</sup>

A survey<sup>6</sup> of 110 physicians who treated cases of impotence, male climacteric and male senility with fortified chorionic gonadotropin showed 77% excellent, good and fair results. Subjectively, 89% of the patients interviewed reported excellent, good and fair results.

### Present Series

The group studied consisted of 55 impotent men ranging in age from 20 to 65. The etiological factor was gonorrhea, trichomoniasis or other urological infection in 40 cases; male climacteric, in 10; and senility in five. I have seen many cases of impotence and poor libido resulting directly from trichomonas infection in the male, due to extensive involvement of the seminal vesicles.

The investigation was conducted by the blind controlled method. Results with the medication tested were compared with those following injections of distilled water, and the patient was unaware of this procedure.

Men with trichomoniasis or gonorrhea were not only treated directly but also asked to bring their wives in for treatment. Since the marital partners reinfect each other, it was necessary to eradicate the disease from both at the same time.

Antibiotics and sulfonamides were employed for the various urological infections. In the treatment of penicillin-resistant cases of gonorrhea, I found dihydrostreptomycin to be a valuable drug.<sup>10</sup>

Seminal vesiculitis provides an important organic cause of decreased libido, flabby erections, premature ejaculation and the associated symptoms which constitute the syndrome of sexual neurasthenia.<sup>11</sup> When indicated in such cases, vesicle stripping, dilatation of the urethra with sounds, cystoscopy, and fulguration of the posterior urethra were performed. In some cases silver nitrate 25% was applied locally to the verumontanum.

In many cases of sexual neurasthenia with loss of libido and potency, an underlying condition is vascular turgescence of the posterior urethra and prostate. In such cases I have found that instillation into the urethra of a 1% solution of ephedrine provides relief similar to its use for nasal congestion. This is also a useful measure to relieve congestion of the urethra and prostate prior to any urological procedure.<sup>12</sup>

After infection was controlled, the men were put on fortified chorionic gonadotropin therapy. A typical course consisted of 1 cc. intramuscular injections twice a week for six to eight weeks, followed by one injection per week and later an injection every other week for maintenance therapy.

The above pattern may be varied according to individual requirements. In four cases it was evident after three or four injections that a higher dosage was required and the amount was increased to 2 cc. twice a week. In other cases, it was necessary to continue injections twice a week for longer than eight weeks in order to maintain the patient's potency.

All patients showed improvement by the fifth week. As a control measure for evaluation of the therapy, the injections were discontinued in some cases for one to three weeks. In every case potency declined in varying degrees during the period when treatment was suspended. As soon as the injections were resumed, potency returned.

In the 10 cases of male climacteric and the five of senility, the principal symptoms were nervousness, depression, fatigue, loss of libido, impotence, disturbed sleep and irritability. In rating the effect of fortified chorionic gonadotropin injections, I used a modified Werner chart<sup>11</sup> as a basis:

#### CLIMACTERIC SYMPTOMS

(adapted from Werner<sup>10</sup>)

1. Flabby erections
2. Loss of libido
3. Impotence
4. Nervousness
5. Memory lapses
6. Hot flushes
7. Excitability
8. Fatigability and lassitude
9. Depression and crying
10. Constipation
11. Irritability
12. Tachycardia and palpitation
13. Vertigo
14. Poor concentration
15. Insomnia
16. Headache
17. Occipitocervical pain
18. Scotomata
19. Numbness and tingling
20. Cold hands and feet
21. Formication
22. Vague pains

The results of my own cases of male climacteric, when studied in accordance with the modified Werner chart, were consistent with those reported in the survey<sup>6</sup> of 110 physicians.

A number of the men in this series, who had been impotent for several years, were able to have successful intercourse and their wives bore children. There was not one untoward reaction in the entire group, and no antagonism with the wide range of drugs used in conjunction with the fortified chorionic gonadotropin.

## Case Reports

The following four case reports are representative of results obtained in the entire series.

*Case 1.* W.D., age 38, colored, taxi driver, complained of gradual loss of erections, decreasing libido, and impotence. He was apprehensive about his health and emotionally upset by his unsatisfactory marital relations. Other complaints included fatigability and low back and perineal pain.

The condition was diagnosed as partial impotence due to a combination of an early male climacteric and a urological infection resulting in seminal vesiculitis.

Treatment with testosterone and antibiotics was of no help. Dilation of the urethra and vesicle stripplings provided some relief.

A course of fortified chorionic gonadotropin injections, 1 cc. twice a week, brought about a dramatic increase in libido and increased erections and potency. The low back and perineal pains disappeared and the patient reported an entirely new feeling of well-being.

As a control test, the injections were suspended for a period of two weeks. The symptoms returned but disappeared again when treatment was resumed. Treatment was interrupted again for a period of three weeks and then resumed, with the same result.

*Case 2.* A.C., age 43, colored, mailman, came to the office with an acute gonorrhreal infection. The disease was cleared up by treatment with antibiotics and sulfonamides. The urethra was dilated to #26 F and the vesicles were stripped.

An aftermath of the infection was complete sexual impotence. A course of treatment with fortified chorionic gonadotropin injections, 1 cc. twice a week, was instituted. In three weeks the patient began to show improvement and by the fifth week his potency was restored.

The treatment was suspended for one week, after which libido and erections began to wane. As soon as therapy was resumed,

the patient recovered his sexual power. The treatment was reinstated for a total of eight weeks, and then the frequency of injections was gradually diminished to an occasional maintenance dose. On this schedule the impotence and its related symptoms were satisfactorily controlled.

*Case 3.* A.G., age 61, retired porter, complained of impotence, fatigue, nervousness and depression.

An urethral smear was positive for the trichomonas parasite and examination revealed inflammation of the seminal vesicles. Further examination and laboratory tests disclosed that he was diabetic.

The diabetes was controlled by diet and tolbutamide. For the trichomoniasis the patient was treated with chloroquine phosphate, sulfonamides, and vesicle stripplings.

After failure of testosterone for the impotence, a course of treatment with fortified chorionic gonadotropin injections, 1 cc. twice a week, was instituted. After three weeks sexual performance was improved but the trichomonas smear was still positive.

Suspension of therapy for one week brought about a total return of the impotence. When the injections were resumed, full potency was restored. The urethral smear was still positive for trichomonas but there was steady reduction in the parasite count.

*Case 4.* B.T., age 36, insurance agent, colored, complained of waning libido, nervousness, fatigue, and depression. He was found to have chronic seminal vesiculitis.

Vesicle stripplings and use of sounds up to #24 F helped the patient somewhat. When this treatment was used in conjunction with injections of fortified chorionic gonadotropin, 1 cc. twice a week, libido increased promptly and nervousness, fatigue and depression were also relieved.

## Summary

A therapeutic trial of fortified chorionic gonadotropin in a group of 55 impotent men gave satisfactory results in all cases by the fifth week. There were no side reactions.

The etiological factor was gonorrhea, trichomoniasis or other urological infection in 40 cases; male climacteric, in 10; and senility in 5. The age range was from 20 to 65.

The typical course of treatment consisted of 1 cc. intramuscular injections twice a week for six to eight weeks, followed by one injection per week and later an injection every other week for maintenance therapy.

In cases of male climacteric, the therapy relieved the related symptoms of impotence, nervousness, irritability, depression, fatigue and insomnia.

When treatment was suspended, impotence and its associated symptoms returned but disappeared again when the injections were resumed.

Fortified chorionic gonadotropin proved much more satisfactory than testosterone in the treatment of impotence and the male climacteric.

When the condition was complicated by penicillin-resistant gonorrhea, I found dihydrostreptomycin to be a valuable drug. In seminal vesiculitis associated with loss of libido, flabby erections and the syndrome of sexual neurasthenia, vesicle stripping, dilatation of the urethra with sounds, cystoscopy, fulguration of the posterior urethra, and application of silver nitrate 25% to the verumontanum proved helpful.

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#### Growth in Clinical Research

In the past 15 years there has been a striking growth in clinical research as a two-way bridge between the laboratory and clinical practice. Coupled with this is the achievement of the pharmaceutical industry in the manufacture, quality control, and marketing of new products. In consequence, the lag between scientific discovery and widespread use of new drugs has been shortened.—Luther Terry, M.D., Surgeon General, U.S. Public Health Service, to 1961 National Health Forum.

# Cancer Trends . . .

CLAUDE C. COLEMAN, JR., M.D.

## Cancer of the Lip

Cancers of the lip develop on the vermillion borders and, if untreated, spread to contiguous structures and metastasize to the regional lymph nodes. The lower lip is involved with far greater frequency than the upper lip, and these tumors are found in males twice as often as in the female. Early diagnosis facilitates curative treatment since they occur in the most accessible portion of the upper alimentary tract and complete surgical removal is possible in almost all instances. Unfortunately, though, cancers in this region are sometimes extensive and neglected. This lamentable plight can be ascribed to the fact that often such patients are followed for an indefinite time without benefit of a biopsy. Various medicaments, correction of associated dental problems, and one or more courses of radiotherapy frequently precede histologic diagnosis.

Often these cancers arise at the site of leukoplakia, cutaneous horns and fissures which have been present for years. Prolonged exposure to sunlight is definitely a predisposing factor in the genesis of these cancers. Chronic irritation from tobacco, alcohol and jagged, carious teeth may also be significant, but poorly defined causes of malignant change. The elimination of such lesions before malignant changes occur would effect a significant reduction in the incidence of cancer of the lip.

### Pathology

Cancer of the lip is the commonest malignancy of the upper alimentary tract. Such tumors are epidermoid in character. Neglected basal cell carcinomas of the skin of

From the Head and Neck Tumor Clinic of the Division of Plastic and Maxillofacial Surgery, University of Virginia Medical Center, Charlottesville.

the lip may extend into the vermillion or mucosal lining, but these lesions are not classified pathologically as true cancers of the lip. To treat any cancer accurately, it is imperative to understand the anatomy of the lymphatic pathways of the tissues involved. The lymphatic vessels of the lower lip begin in a submucosal plexus, the efferent vessels of which pass to the nodes in the submucosal and submaxillary triangles. These nodes, if involved, sometimes become fixed to the mandible in the region of the submaxillary salivary gland. Contralateral and bilateral metastases occasionally occur as a result of cross anastomoses of lymphatic channels in the central part of the lower lip. Neglected cancers of the lip extend into the contiguous mucosa of the cheeks and floor of the mouth and eventually involve the periosteum of the upper and lower jaws.

The lymphatic drainage of the upper lip and commissures is through efferent vessels passing obliquely across the cheek to the superficial parotid nodes which occupy a position beneath the parotid masseteric fascia on the surface of the parotid salivary gland. Ultimately, there is spread into the superior group of jugular nodes located beneath the posterior digastric muscle along the course of the internal jugular vein. About 10 to 12 per cent of all lip cancers spread to the nodes and such metastases generally remain confined to those nodes in the suprathyroid portion of the neck until late in the disease.

### Treatment

Adequate excision of the primary cancer will generally cure most low-grade cancers of the lip. Redundancy of the lower lip will permit resections up to one-quarter of the width of the lip and satisfactory primary closure. Resections of greater mag-

nitude require some form of immediate or delayed reconstructive procedure. Local pedicle flaps based on the coronary artery of the lip are ideal for immediate reconstruction and may be utilized for total lower lip reconstruction. (Figs. 1, 2) Complex re-

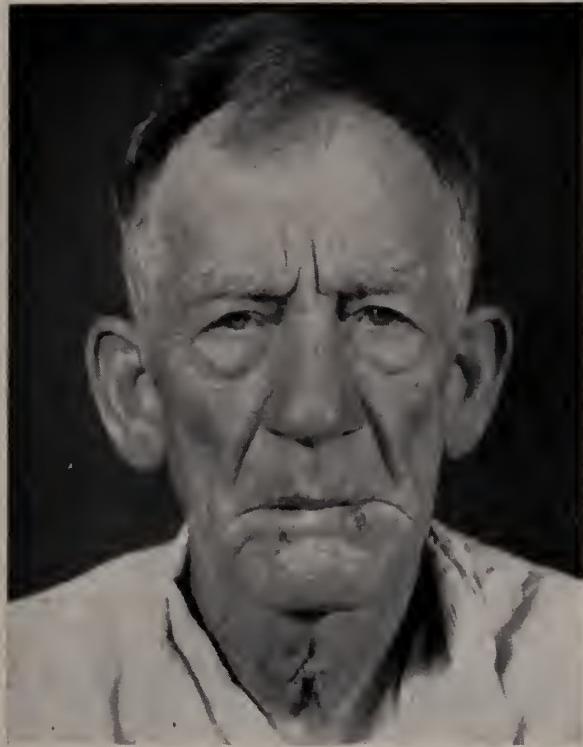


Fig. 1. Extensive epidermoid cancer extending deep into the lip with major involvement at the left commissure.

sections which include not only the lip but also the mandible and cheek require coverage with pedicle flaps migrated from a distance. (Figs. 3, 4, 5)

*Cervical Lymph Nodes.* In view of the relatively low incidence of metastases from cancer of the lip, we oppose radical neck dissection as a routine part of the primary therapy. If there are no involved lymph nodes at the time the primary cancer is resected, we recommend that the patient be examined at regular intervals postoperatively, and if there is subsequent nodal metastasis, a planned formal dissection of the neck on the involved side should be performed. If the primary lesion arises in the central portion of the lower lip, we advocate radical neck dissection on the clinically involved side, and suprathyroid dissection on



Fig. 2. Near-total resection of low lip and left commissure. Immediate reconstruction with modified Estlander flap from left cheek and lip. Little evidence of flap donor site. Patient free of disease for over four years.

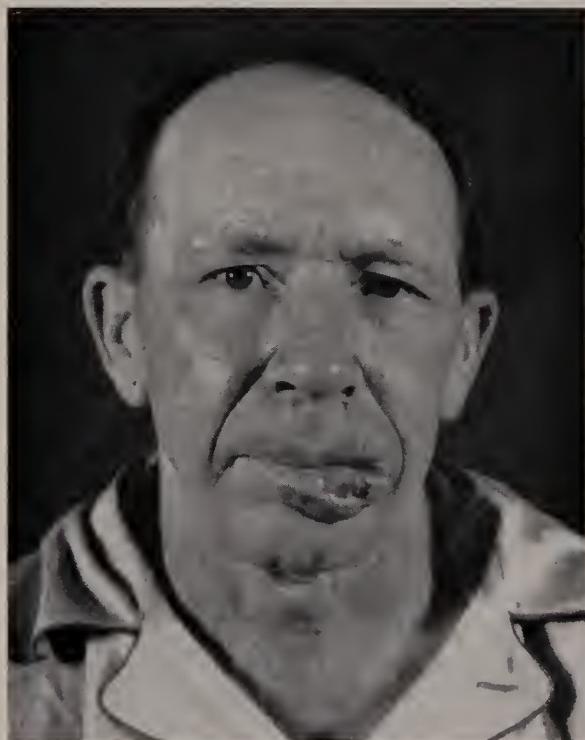


Fig. 3. Extensive, neglected, deeply infiltrating cancer of left lower lip and upper lip. Patient followed for over four years without biopsy because of  $4+$  Wassermann. (By permission of Plastic and Reconstructive Surgery)

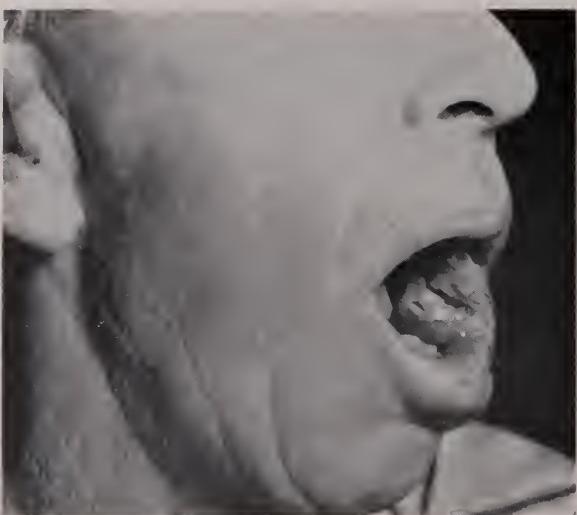


Fig. 4. Deep extension into mucosa and musculature of cheek. Clinically involved left submaxillary lymph nodes.

(By permission of Plastic and Reconstructive Surgery)

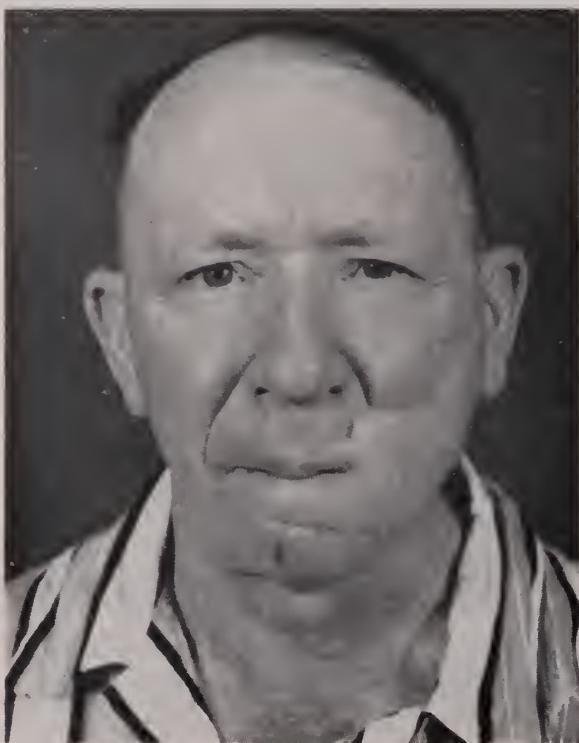


Fig. 5. Patient nearly six years after composite resection of lips, cheek and left radical neck dissection. Stages reconstruction with chest flap.

(By permission of Plastic and Reconstructive Surgery)

the opposite side. Patients with bilateral involvement of the cervical nodes should have a bilateral radical neck dissection performed preferably as one procedure.

## Prognosis

Curability of cancer of the lip depends upon the following factors:

1. *The grade of the primary tumor:* Marked anaplasia of the primary cancer with invasion of the muscle generally indicates a greater propensity for metastases.
2. *Size of the primary lesion:* Large cancers with deep invasion of muscle have a higher local recurrence rate and metastasize earlier than bulky, exophytic tumors.
3. *The age of the patient:* Cancers occurring in patients who are not yet 50 years of age tend to be more malignant than those occurring in the older individual (according to the Broder's method of tumor grading).
4. *The presence or absence of cervical metastases:* The salvage rate in patients with cervical metastases falls precipitously, and contralateral nodal involvement is not an uncommon associated phenomenon.

## Summary

1. Cancer of the lip is the commonest cancer of the upper alimentary tract.
2. Adequate resection of lip cancers without nodal involvement offers the patient the maximal chance for cure.
3. Radical neck dissection is the preferred treatment for patients with a histologic diagnosis of cancer of the lip with clinical involvement of the regional nodes.
4. Cancers which require resections of more than 25 per cent of the width of the lower lip create defects which must be reconstructed with local pedicle flaps based on the coronary artery of the lip or with pedicle flaps migrated from a distance.

# Public Health . . .

MACK I. SHANHOLTZ, M.D.  
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## **Testing Food for Radioactive Contamination**

Increased levels of radiation resulting from Soviet tests have intensified the program of radiation monitoring by the United States Public Health Service (U.S.P.H.S.) in co-operation with State and local health officials. In addition to milk sampling which has been under way for some time, a food sample collection station was established in Virginia on January 15, 1962.

This diet sampling program represents an expansion from eight U. S. sampling points, started in 1960, to over 33 reporting stations across the nation. This increase in sampling was deemed necessary in order to measure and evaluate radiation consumption and effects upon our citizens. The Virginia State Department of Health has been co-operating in the past with milk and air sampling programs and was most anxious to expedite this new phase of the monitoring program as rapidly as possible. Accordingly, a suitable boarding school in Norfolk was approached and the management was most happy to cooperate. In detail, the sampling was done as follows:

The entire amount of food, including soft drinks, candies, and snacks that a typical child would consume in seven consecutive days was collected and stored at deep freeze temperatures. At the end of the seven-day period, the frozen samples were packed in dry ice and mailed to the U.S.P.H.S. Radiological Laboratory in Montgomery, Alabama, for analysis of radioactivity. This procedure will be followed for one week of each month for an undetermined period. The U.S.P.H.S. is to pay the cost of the food, its collection, and shipping to the laboratory for this project.

At the laboratory, the procedure is as

follows: All of the food, upon arrival is mixed together thoroughly and the entire food mass is tested for its level of total radioactivity. If results appear significant, the foods are analyzed for strontium 90 or 89, carbon 14, iodine 131, cesium 137, and for non-radioactive calcium, phosphorus or for other possibilities.

To date, laboratory results from other total diet stations revealed only background radioactivity. With the increase in atomic testing, it is anticipated that radiation counts will rise above current background levels.

In order to maintain an active interest in the continuation of the program, results of the tests will be sent to the boarding schools from which samples are taken. The State Department of Health will also be informed of results, so that a current picture of radiation levels will be available for future reference.

Other phases of the U.S.P.H.S. radiation network are being intensified. All sixty stations in the nationwide Federal-State Milk Surveillance System are being adapted to measure the amount of radioactive iodine 131 in the atmosphere. This adaptation process should be completed by the end of 1962. The sixty stations monitoring fresh pasteurized milk were changed from monthly to daily, twice or three times weekly schedules, to provide quick assessment of iodine 131 contamination. As the levels of iodine 131 decreased, the frequency of milk collections were decreased.

Surgeon General Luther Terry has said that, at present, radioactivity is well below any potentially hazardous level; and, therefore, protective measures designed to limit the exposure of any individual or group have not been employed. The National Advisory Committee on radiation is conducting

a study of various protective measures that might be taken if necessary. This report

will probably be ready by the end of the year.

MONTHLY REPORT OF BUREAU OF COMMUNICABLE  
DISEASE CONTROL

	January 1962	January 1961
Brucellosis	0	0
Diphtheria	1	2
Hepatitis (Infectious)	157	91
Measles	1259	1429
Meningococcal Infections	7	6
Aseptic Meningitis	1	1
Poliomyelitis	1	0
Rabies (In Animals)	11	19
Rocky Mt. Spotted Fever	1	2
Streptococcal Infections	715	593
Tularemia	2	2
Typhoid Fever	1	0

### Detects Mild Measles

A simple eye examination can detect a mild case of measles in which obvious symptoms are missing, according to Drs. Alfred L. Florman and Howard J. Agatston, Manhasset, L.I., N.Y.

Since mild measles provides immunity against the disease, the ability to diagnose such cases means that unnecessary preventive measures could be avoided.

A child given gamma globulin for protection against his first exposure to measles, for example, may not develop the fever, rash, spots or cough typical of measles and, therefore, be given more gamma globulin on later exposure. However, further gamma globulin injections could be eliminated if the eye exam confirmed that he suffered a mild case of measles.

Writing in the February 17th Journal of the American Medical Association, Drs. Florman and Agatston said they had found that in both mild and regular measles a slight inflammation of the cornea of the eyes and lining of the eyelids was present for a number of weeks.

Eye inflammation of this type can only be determined by an ophthalmologist with a microscopic device. However such eye exams are readily available since ophthalmologists in most communities have been using the technique routinely for many years.

Previously the only way to determine immunity in persons who did not develop apparent symptoms was by an expensive and time-consuming blood analysis performed in a virology laboratory and such laboratories are not readily available to all communities.

The eye symptoms, which were found to occur in the early stage of the disease, also could lead to prompt treatment when spotted by the ophthalmologist.

In a study involving 34 children, eye inflammation was found as early as 10 days before the more obvious signs of the disease appeared and as late as 117 days afterward. The degree of inflammation did not correspond with the severity of the measles.

# Mental Health . . .

LAUREL CHILDE KASSOFF  
ARTHUR I. KASSOFF

## **Family Relationship in the Problem of School Phobia**

Most of us know of children who cannot go to school because of severe anxiety. Donald, age eight, is typical. He vomits, runs a temperature, and cries when forced to ride the school bus. On school days he can't eat breakfast. Stomach pain is severe but his family doctor can find no physical basis for it. At night Donald is enuretic. He has nightmares of his parents' dying. Although his school grades are excellent, he refuses to attend class unless his mother stays with him.

### **Previous Studies**

The number of such children with school phobia seems to be increasing. Of 4000 recent admissions to Johns Hopkins Hospital Children's Psychiatric Service, the incidence of school phobia cases increased almost six times, from 3 per 1000 referrals to 17 per 1000 in eight.<sup>2</sup> In a small suburb of Boston, 27 cases were uncovered in a 3-month period in 1955.<sup>7</sup>

School phobia has been known as a distinct disturbance among children for at least 20 years. Adelaide Johnson and associates<sup>4</sup> in 1941 considered it to be one aspect of separation anxiety, a deep-seated neurotic disorder with poor treatment outlook. In contrast to widespread research on such educational problems as reading difficulty or underachievement, there has been little published subsequently on the crippling dis-

order. Only nine direct references to school phobia have appeared in the professional literature within the past ten years.

A 1958 report of 26 cases treated at Johns Hopkins Children's Psychiatric Service<sup>2</sup> indicated the family picture as one of communicated anxiety. Difficulties of treatment were outlined; of one group of 11 children given long-term therapy, fewer than half returned to school.

At the Hamstead Child Therapy Clinic, England, analysis of mother and child over a period of years was found effective in two cases of school phobia.<sup>3</sup>

The development, meaning and management of school phobia was investigated for several years by the Judge Baker Guidance Center, Boston, under a partial mental health grant.<sup>7,8</sup> A total of 36 children with symptoms of school phobia were referred to a field unit of the Judge Baker Guidance Center during its two years of operation in the Newton, Massachusetts, school system. Early intervention in these problems was helpful. Sixteen children were seen for brief therapy by clinic personnel right in the school; all of these children returned to school. Four others were referred for more intensive clinic treatment. In the 16 cases with no therapeutic intervention, half had persisting symptoms. When treatment for clinic referrals was initiated during the same semester as the onset of the symptom, school attendance was resumed after a few weeks. By contrast, when treatment was delayed for a semester or more after the onset of the phobia, it persisted for months and even years after therapy was begun.

Researchers agree that school phobia is seldom the result of traumatic events or poor experiences in school; its roots lie in the child's reaction to parental conflicts. In all

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phobias, the dread is not so much of the object itself but is displaced from the person's inner anxiety.

Most school psychologists, administrators, and teachers, as well as physicians, see at some time a child who panics at the separation from his mother. In general, school personnel are too enlightened to punish such children or call them truants, yet are puzzled about what action to take. Knowledge of certain typical patterns of family interaction in the development of this symptom would be helpful to schools. Unlike certain other neurotic disorders seen in children, school phobia almost always includes certain clear-cut factors of behavior and family relationships. If these are recognized early and treated promptly, the child and his family can be spared much grief.

### A Summary of Thirteen Cases

We would like to illustrate these patterns of family interaction in school phobia by discussing the 13 most recent cases known to us. All, except one child of 16 who stopped formal education, have returned to school. Six required psychotherapy involving both parents and child for two to six months before returning to school. These youngsters also had a period of home-bound instruction from a visiting teacher. In one additional case, seeing the mother herself for several months broke up the disturbed family pattern so that the child was able to attend school again.

In the five remaining cases, a brief diagnostic study of the family with specific interpretation to the parents of the dynamics was enough first aid to get the child back to school. In fact, it was not necessary to see two of these youngsters directly. The parents told us enough about the situation to enable us to make an adequate interpretation with the parents who were then able to return the child to school. In all of these cases, the child had been out of school for periods ranging from four to six weeks before being referred. Of course, this is a selected sample in that these families were

all motivated towards help. Yet the relief of the symptom shown with early treatment in these cases is in contrast to pessimism expressed in the literature about treatment in long-standing cases of this type.

School phobia is found somewhat more often in girls than boys; in our sample there were nine girls and four boys. It can be found at any age, even preschool, but is more likely to erupt at periods of stress: entering kindergarten, at about age 9, and late high school. Five of our cases were clustered at age  $8\frac{1}{2}$  to  $9\frac{1}{2}$ , an age at which many children are described as antagonistic, feeling inadequate and uncertain and preoccupied with body functions. Most of these youngsters showed obsessive and hysterical traits. Their reaction to school was acute regression with panic. All of them had gastro-intestinal difficulties: poor eating, overeating, constipation, diarrhea, vomiting, etc. In a descriptive sense, their problems were on an oral level. Many were fearful in any situation where they were separated from parents: with doctors, in Sunday School, and on trips. In most cases the parents could report these related problems going back to earliest infancy in the child. All but one had severe colic as babies.

The eight cases in this study aged 15 to 17 were all girls. Each had some previous difficulty around getting to school, and had shown some of the fears and somatic complaints mentioned in discussing the younger age group. Yet by this time the symptom of school phobia had broadened into a more widespread character disorder. Depressive and paranoid features were more evident. Projection played a more prominent part in the picture. One girl had made a serious suicide attempt when she could not stay in school. Another girl felt there were strangers inside her telling her she would not love her parents if she went to school. It seems significant that these adolescent girls were fearful of boys and their own sexual impulses. At school some had difficulty with such regulations as wearing gym suits and undressing for showers.

In terms of school work, every one of these 13 children were average to brilliant students. None had learning difficulties. Most of them were, if anything, too conscientious and perfectionistic about school work. All were considered to be well-behaved pupils who may have been a little shy but still had friends. They got along better than most with their teachers, except in specific instances when a teacher had traits strongly resembling one parent. In what is sometimes called "school citizenship" several youngsters were outstanding. Even at the time one girl was in treatment for school phobia and receiving home-bound instruction, she was an appointed delegate to the White House Conference on Children and Youth.

### An Illustrative Example

As pointed out by Hanna Colm<sup>1</sup>, the anxiety of a phobic child cannot be understood by looking at the child alone. One must understand at least three people—mother, father, and child—to sense the interpersonal meaning of this symptom. The case of Polly Brown illustrates this interaction.

Polly, aged 16, was out of school so much for various allergies, stomach complaints, and anxiety attacks that she was asked to leave school. Later she was given home-bound instruction once a week to keep up with her studies. She was not only pretty and well-liked but was known as the brightest student in the junior class.

At home, Polly's behavior was much more babyish. She liked to suck her thumb while watching TV. Mrs. Brown often resented Polly's insatiable demands for special food and attention. Yet Mrs. Brown's whole existence was dedicated to being a "good mother", unlike her own parents, so she let Polly push her around. Mrs. Brown herself was one of nine children. Her father had been a busy dentist who preferred boys in the family. Her mother was a cold, haughty person who let servants raise the children.

Trying so hard to be an adequate mother

kept Mrs. Brown from thinking too much about the lack of satisfaction in her marriage. Her husband, a Commander in the Navy, could take over a country but could not deal with his three children—especially Polly, who had been his pet as a young girl but often had bitter fights with him now. This father tended to bark orders, fail to enforce them, and then in a hurt way make immature demands on his wife for mothering. He himself had been an adolescent rebel who was sent to military school for misbehavior. No wonder he had mixed feelings about rigid discipline, using it in his military career and expecting the same success at home, but unconsciously resenting his own experience as a child even while needing to repeat the process as a parent himself.

Here we see the typical interaction in school phobia. Polly hated her parents for their unconscious conflicts about setting limits. These, of course, stemmed from the parents' own life experiences. Mrs. Brown felt inadequate as a mother, incapable of fulfilling the needs of her children. She tried to overcompensate for these feelings by being a servant to her family, then hated them for putting her in this role. Partly Polly loved her mother's special attention and tried to conform to what she felt mother expected of her. But partly Polly felt so much rage at her dependence on these indecisive, anxious parents that she was sick with panic. The panic about her own hate was diverted to school, the place she could go if this binding relationship did not exist. In this way, Polly also managed to punish her mother for making her so dependent. "If you want me dependent, I'll both please you and punish you by staying out of school." At the same time, Polly also punished herself to atone for her guilt through depriving herself of all the satisfactions of school and becoming independent.

Going to school became a power struggle with ambivalence on both sides. Parents said, "Don't leave us, but don't bother us." Polly said, "I hate you and I need you so much." In the struggle, Polly was clearly

the stronger; nobody could make her go to school. Yet she masked her strength in helplessness. Polly also masked her adolescent rivalry with mother by going back to baby ways. At times Mrs. Brown unconsciously encouraged this out of fear that Polly could outshine her both in beauty and in brains. Similarly, Polly's adolescent yearnings for closeness with father were masked in hatred, which again the father tended to foster. Uncertain of his masculine role and his feelings about this pretty girl, father became anxious and antagonistic.

After three months of treatment once a week with both mother and daughter, as well as seeing the father once, the basic outlines of this interaction were apparent to the three members of the Brown family most concerned with Polly's school phobia. Mrs. Brown came to see that she had devoted too much of her life with good intentions but in an unhelpful way with her family. She went back to work as an economist. No longer at home all the time to intervene, she found that her family could work out their own solutions. Father felt more genuinely needed, less left out, and tried to get to know his children as human beings rather than as reflections of his own conflicts. Polly saw that she either did or did not do what her parents asked of her, and that somehow her own individuality got left out of this. After expressing a great deal of hate about her parents, Polly's more positive feelings began to emerge. She was able to talk with her parents more meaningfully and with less hidden venom. Polly not only was able to get back to school but the family was integrated on a more comfortable basis.

Often school phobia seems to be a child's dramatic cry for help. This symptom cannot be ignored. Polly was defending herself against the contradictory anxieties of her parents, and in effect forced clear-cut action which also relieved family tension intolerable to her.

### The Typical Family Constellation

Of the families we have seen with this

problem, certain striking similarities of individual family members were noted.

Fathers were much more concerned with school phobia than fathers in some other kinds of family problems referred to us. Frequently it was the father rather than the mother who called for an appointment. All but two of the fathers asked to come at some point in the diagnosis or treatment; two fathers were seen regularly. These men tended to be more effective in their discipline with the children than the mother—when they took an interest. Most often they criticized the mother and withdrew from the situation. They all had been closely tied in a more or less stifling way with their own mothers. Usually as children they had been rather sickly "mother's boys" with ineffective, rigid fathers. In three cases paternal grandmothers were actually living in the family home at the time of the child's school phobia. Conflicting anxiety in these men seemed to go along with uncertainty about the male role. On one hand, they wanted to be big tough guys and sometimes were. On the other hand, they were expected to be helpless and dependent with their own mothers and this pattern was apparent in other situations too. Occasionally a father was competitive with mother about solving the child's problems. "Just leave it to me, and I'll show you up." The child senses this as a threat to mother's and father's relationship so he is immobilized.

Mothers of these children had glaringly unresolved dependency conflicts themselves. We were often told by mother that she married father because he seemed so strong and dominant. In the marriage she learned he was immature and wanted to lean on her. Feeling frustrated in her own needs, she was inclined to suffer from menstrual difficulties, migraine headaches, or severe problems with pregnancy and childbirth. Usually her childhood history differed from father's in one important aspect: her own mother was more or less absent. Grandmother had to work, or had eight or nine children, or was preoccupied with interests

outside the home, or was frankly psychotic. Daughter grew into a woman who was determined to do a better job than her own neglecting mother, yet went too far and became overprotective with her own children. She was often competent, sophisticated, and well-educated but seemed like a little girl when talking about the problems of her children. Feeling more like a child than like a mother, she was helpless to take a stand when the child balked at school. This got shifted into a belief that the child needed her and should not be taken from her. Over and over we were told, "You won't be able to get Johnny to leave me."

Against this specific background of conflicting anxieties on the part of the parents, the child feels both left alone and overwhelmed. He hates his parents for not getting him back in school, and he needs to deny his anger by insisting that he cannot get along without his parents. He cannot trust his parents, controls them through this symptom, and hates them and himself for getting away with it.

### Management and Treatment Suggestions

Although school phobia is a family problem, the school must take some kind of action. This can be done most effectively in two ways: first, recognizing school phobia for what it is; and second, dealing with the symptom immediately. The family physician's recommendations may be crucial in getting proper treatment started.

First, school personnel should be familiar with the dynamics of school phobia. Perhaps a local psychologist or physician could offer some comments about it at an in-service teacher training institute or on a more informal basis. At least three factors need to be kept in mind for a realistic approach to this problem.

1. School is not the problem. We know that all phobias represent anxiety displaced from the child's real fear; the child is not basically frightened of school. Parents often describe in lengthy detail everything about the school that makes Johnny dislike it, ex-

pecting school manipulation to resolve the difficulty. Johnny needs a new teacher or a half-day schedule or a hot lunch delivered by mother. It is easy to fall into this trap, but we have never seen it solve anything for long.

Younger children more often than adolescents bring up some fears of classroom or teachers. We found that mothers as well as children were unaware of this mechanism of avoiding anxiety. When a child is frequently absent from school for emotional reasons, it is up to the school to call the situation to the parents' attention as an emotional problem, not a school problem.

2. Separation anxiety can seldom be overcome by the child himself. While the child cannot leave the parents, it is equally true that the parents cannot let him go. The specific nature of the family interaction is different in each case but represents unconscious and usually deep-seated problems. Therefore, punishment of the child is inappropriate and ineffective.

3. Staying home from school means that the child has won a power struggle. The parents are in conflict about whether they, with their own inadequacies, can insist that the child attend school. He seems so sick and helpless.

We have to remember that this helplessness is a mask for the child's inner rage and frightening strength. It seems significant that so many children with school phobia are basically strong, capable, bright, attractive youngsters who might actually be able to threaten the parents' sense of adequacy. This guilty fact must be hidden from everybody as well as themselves. When the child wins the fight about not going to school, he becomes more anxious. More than most children, he longs to depend on a strong adult who can keep his feared impulse in line.

The illnesses and complaints — stomach trouble, allergies, asthma, enuresis—shown by almost every child with school phobia are not really proof of the child's weakness. These come about partly because of in-

ternalized and controlling rage at being allowed to be so powerful, at not being helped. Yet this power is all the child knows and he is very reluctant to give it up. School people who intervene in this problem can easily be caught in the middle of the power struggle too. The feelings involved need to be recognized, but a responsible adult must take a firm stand behind the demands of reality.

This brings us to the second main aspect of dealing with school phobia: the importance of earliest intervention in the symptom. It has been shown that if a child is out of school for as long as a semester before starting treatment, his prospects of ever returning to school are dim. Giving in to the symptom compounds the basic problem. To keep these children in school, the school should be aware of three aspects of treatment: prevention, first aid, and psychotherapy.

1. Prevention. In our experience, there were early warnings of disturbance sometimes going back to infancy but always showing up at some point in the first four grades. The child was often sick in ways that did not respond well to treatment. He was frequently absent or trady, wanted his mother to stay at school, over-reacted to minor school incidents. In a crisis, he acted babyish, shed tears, did not stand up for himself. If such conditions are observed to persist in a child, the school should suggest psychological help. Good teachers who try to give the child a relationship of trust can be helpful, as long as they do not become over-involved. Special effort should also be made to see that a child keeps up with his schoolwork in spite of absences. If a conscientious child gets behind his class it can be very difficult for him to adjust to school.

2. First aid. School phobia is a psychological emergency and should be treated as such. Prompt referral of the family to a child guidance clinic or psychotherapist is indicated. Almost all such cases treated early enough can be helped.

When such help is unavailable or long de-

layed, emergency help is worth a try. A school psychologist or family physician with an understanding of school phobia should see the parents, usually both mother and father together. We have found that parents are baffled by this problem and are eager for any help with the symptomatic aspects. It is our experience that in an hour or so some parents can tell you all you need to know about the interaction of family problems leading to the school crisis, especially if you have some idea of what to expect. An attempt at specific interpretation can be made, with the end in view that the child must get to school and the parents must let him. We emphasize that it is the parents' role, not the school's, to insist that the child go. Both parents and child in this situation are expert at shifting responsibility elsewhere. Once they get the idea that this is your problem, you cannot help them.

3. Continued treatment of parents and child is the only effective answer if the child cannot get back to school promptly. We have found this to be essential in most cases involving children over 10. Providing home-bound instruction for the child is not enough. Without treatment, this can easily result in the family giving up responsibility for returning the child to school. The child has not been helped with the causes of his phobia and is likely to regress seriously, withdraw further from more and more phobias, and suffer from social inferiority.

### **Therapeutic Problems**

A separate paper might be written on the course of family treatment in problems of this type. A few comments might be relevant here, not so much to discuss treatment as to indicate experiences which might be similar to those faced by others who intervene in problems of school phobia.

Younger children who are seen in therapy seem at first glance to be delightful patients: charming, immature, eager for help. Their dependent appeal is one aspect of their conflict. Because their infantile position in the family has been prolonged, the repressive

process seems to have been impaired, and they display without reticence much psychoanalytic material: oedipal fantasies, murderous dreams, etc. This needs to be expressed and accepted, but child and therapist together must also begin to see how he wants more than tolerant limitlessness. One danger in nonanalytic permissive play therapy with such a child is that this is his problem: conscious or unconscious permissiveness on the part of the parents has led to anxiety. The therapist needs to convey understanding, not only in words but in the relationship that the child is longing for someone who loves him first to curb his impulses and then to help him accept his frustration and anger when limits are set. The child wants limits and hates them; hatred of the parent for being conflicted too is so unbearable that it should not be interpreted directly to the younger child. Instead, the therapist by reacting honestly and developing mutual trust with the child helps the child to integrate his misplaced hate. As this becomes less threatening, the child's guilt and need for self-punishment through his phobia lessen too.<sup>1</sup>

Older children, especially adolescents, are often defiant about their problems and angry about any referral for help. Accepting this anger so often melts the child's defiance that we have come to believe this is his way of stating his problem. He says in effect to the therapist, "My problem is anger. What are you going to do about it?"

Another reason why school phobia seems so much more tenacious in high school students is the reality that they must soon be on their own. Bound up in unresolved baby conflicts, they feel they cannot leave home. They ask how they can go out into a hostile world when their own protective home has offered so little sustenance. Among other things, the adolescent needs to see that the world is not necessarily all threatening and the home not necessarily all giving.

Parents, with all their own unresolved dependency needs, are also likely to be suspicious of the therapist. They demand im-

mediate concrete help for little problems which they could handle very well themselves, such as, "What should I do if Johnny won't eat breakfast?" On the other hand, they are so sure the therapist will be critical or rejecting that they are often reluctant to go into personal problems not involving the child directly. They are prone to feel guilty and label themselves with some such term as "rejecting mother". Their feelings about this must always be related to their own life experiences.

The crisis of getting the child back in school brings up all the unresolved conflicts that underlie the disturbance. This makes the conflicts more noticeable, more accessible to treatment, but also harder on the therapist. Angry and dependent feelings are shifted to the therapist who is seen as imposing such difficult demands. The experience of living through this conflict with the therapist is often liberating. Many times when the child returns to school we find the parents feeling so masterful about understanding their conflicts enough to permit this that they seem able also to terminate treatment. Occasionally this is a very logical time to end; sometimes treatment needs to be carried further.

In summary, we believe that the symptom of school phobia represents a fairly specific family interaction resulting in separation anxiety. When families receive enough psychological understanding to enable the child to return to school, family relationships also benefit.

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### Topic at AMA Meeting

A bloodless form of brain surgery that relieves once-hopeless cases of tremor and rigidity will be described at the 111th annual meeting of the American Medical Association in Chicago next June.

Dr. Irving S. Cooper, director of the department of neurologic surgery, St. Barnabas Hospital for Chronic Diseases, New York City, will give physicians a summary of his 10-year investigation, comprising 2,000 consecutive cases. He will document his results by disease, showing, for example, that it is now possible to abolish parkinsonian tremor and rigidity in properly selected patients with better than an 80 per cent chance of lasting success and with a risk of less than 1 per cent.

Dr. Cooper's technique, recently modified, utilizes freezing to minus 200 degrees centigrade as a surgical tool instead of an ordinary scalpel. Using liquid nitrogen delivered with an insulated cannula, he freezes small areas deep within the brain to stop permanently the tremor and rigidity associated with a number of diseases.

Dr. Cooper will appear on the program, sponsored by the Section on Nervous and Mental Diseases of the AMA Council on Scientific Assembly, June 26, at McCormick Place. In addition to his lecture, he will show a 15-minute movie of patients both before and after surgery. Some of these patients, who underwent this type of surgery as far back as five and seven years ago, will be introduced to the doctor audience.

Dr. Cooper will review his surgical results in the following diseases:

—Parkinsonism—A disease once known as "shaking palsy." It is accompanied by mus-

cle rigidity and uncontrollable shaking or trembling.

—Dystonia—A rare disease leading to grotesque distortion of posture, produced by steady muscular rigidity, which in the beginning is a parkinsonian type but becomes more intense and unyielding.

—Multiple Sclerosis—A disease of the central nervous system which causes loss of vision, weakness of limbs, awkwardness and clumsiness of movement.

—Cerebellar tremor—A disturbance arising in the cerebellum, the second largest single section of the brain. It causes spastic, disjointed movements and lack of muscular coordination.

Chorea—A disease characterized by symptoms of abnormal spontaneous muscular movements that tend to be purposeless, irregular, abrupt, quick, brief and unsustained. The disease is sometimes termed "St. Vitus dance."

—Hemiballismus—A disease that causes twitching and jerking movements, involving only one side of the body.

Dr. Cooper said that his procedure carries such a small risk that it is possible to apply the technique in very early cases as well as in far advanced cases. By use of this method, reversible blocking of nerve conduction can be produced in a conscious and cooperative patient.

Reversible cooling at zero centigrade for 30 seconds allows sufficient time for reaction testing in some brain areas. Freezing for three to five minutes produces a permanent lesion that completely abolishes all tremor and rigidity.

# *Current Currents*

KERR-MILLS: The West Virginia Kerr-Mills program is not in serious financial trouble, as reported in various magazines and newspapers. The West Virginia Commission of Welfare has published a financial statement which showed that approximately \$900,000 in State funds remained to support the program. This amount, when combined with the federal share, is reported to total over \$3 million. The program was expected to go back into operation after incorporating many of the recommendations of the West Virginia Medical Society.

KING-ANDERSON: The Administration is going all out to see that a medical care for the aged bill, financed by the Social Security system, is enacted. Although under considerable pressure, Chairman Wilbur Mills of the House Ways and Means Committee has declared that he will not support the King-Anderson bill (H. R. 4222). He is reported to have said: "It is entirely too early to reach any definite conclusion as to whether the Kerr-Mills approach will, or will not, solve the health care problems of our elder citizens. I believe it should be given sufficient time to show what it can do. Therefore, I do not see how I can vote at this session of Congress for a different approach to the problem through Social Security."

HEALTH INSURANCE: The AMA Board of Trustees, meeting in Chicago, recently issued the following statement: "At its meeting today the Board of Trustees expressed its strong commendation of the private health insurance industry for its tremendous development of group and individual health insurance programs for senior citizens and other age groups. The AMA Board urges all physicians to accept an adjusted level of compensation for older persons of modest resources or low family income whether they are covered by private health insurance policies or Blue Shield plans. The AMA Board also urges physicians to consider such special compensation for services rendered to persons in this group whether they have health insurance coverage, a prepayment type policy, or pay directly for such expenses 'out of pocket'.

"The Board of Trustees applauds those employers who are in increasing numbers covering their retired employees and making arrangements for some kind of prepayment or health insurance plans for those about to retire.

"The phenomenal development in recent years of prepayment plans and voluntary health insurance—especially among the aged—clearly reflects the preference of Americans for voluntary selection of financing mechanisms rather than for any compulsory government scheme."

A SEAT BELT MIGHT SAVE YOUR LIFE—OR PREVENT SERIOUS INJURY TO YOU OR TO ONE OF YOUR FAMILY!

VA HOME TOWN CARE PROGRAM: The Veterans Administration has adopted a new procedure for the payment of physicians rendering medical treatment to VA beneficiaries.

Payments will be made monthly and any statements received in the Veterans Administration Regional Office, Roanoke, Virginia, by the 20th of each month will be included in the checks issued the first part of the following month.

The new procedure will furnish each physician a list of the veterans for whom payment is being made, and will show the month that services were rendered, and the amount paid for each patient. The list will be attached to the one check issued the physician.

This procedure has been in operation in other states for the past year, and has proven very satisfactory.

TED WIPRUD RETIRES: His many friends will be saddened to learn that Theodore "Ted" Wiprud, Executive Director and Secretary of the Medical Society of the District of Columbia since June, 1938, will retire on July 1. Ted has long been the "dean" of medical society executive directors and has won the respect and admiration of all who have had the rewarding experience of working with him. The District, somehow, won't quite seem the same.

George Cooley, Secretary, Council on Medical Service, American Medical Association, has been named to succeed Mr. Wiprud.

AMA DUES: AMA members should by now have received their 1962 statements. AMA has raised its dues this year to \$35—but has never offered so much in the way of services. AMA membership is a "good buy" anyway you look at it.

VIRGINIA HOSPITAL ASSOCIATION: The Medical Society of Virginia is very pleased to have the Virginia Hospital Association share its facilities. The Association, which recently rented a second floor office in the Headquarters Building, has employed Mr. Stuart Ogren, recently of Lansing, Michigan, as its Executive Secretary. This arrangement should make for even closer liaison between the two groups.

DO YOU HAVE SEAT BELTS IN YOUR AUTO? YOU NEED THEM EVEN FOR SHORT TRIPS TO THE SHOPPING CENTER, SCHOOL OR CHURCH. MOST INJURIES OCCUR WHEN THE OCCUPANT IS THROWN FORWARD OR TO THE SIDE BY THE IMPACT OF A COLLISION.

## String Phlebitis of the Breast

**M**EDICALLY SPEAKING there is probably little new under the sun but from time to time entities appear that have occurred so infrequently that they have passed unrecognized for many years. Such a condition is a thrombo-phlebitis of a superficial vein situated in the outer half of the breast. This has been variously termed "string phlebitis of the chest wall", "subcutaneous phlebitis of the breast region" and "Mondor's disease". Why it should have been named after Henri Mondor (1939) of France is hard to figure for it had been described earlier in this country by G. A. Williams (1931), W. B. Daniels (1932), and Alexis V. Moschowitz (1933).

Mondor was uncertain after histological examination of one case as to whether the cord represented a lymphatic vessel or a thrombosed vein. Moschowitz attributed the string-like structure to a "vestigial mastitis" with superimposed infection. His explanation appears unlikely but his description of the cord, in which he stated it felt similar to the vas deferens, is an apt one. The possibility of lymphatic permeation, secondary to an occult carcinoma of the breast, giving the same picture, has been mentioned but is probably remote.

The confusion over the nature of such a superficial structure is probably the result of the infrequency with which it has been observed. On the basis of two patients recently examined by the author, the condition is characterized by a firm, fibrous, relatively non-tender cord, which extends along the outer surface of the breast lateral to the areola and disappears below into the deeper tissues of the adjacent chest or abdominal wall. The most likely cause is thrombosis of one of the costo-axillary veins. The degree of fibrosis about the vessel may appear excessive. When the arm is raised, or the breast tissue is stretched, the subcutaneous structure becomes evident as a sulcus extending diagonally upward toward the anterior axillary fold. (see illustration)

The thrombosis may follow an infection in the area or trauma to the part. It has resulted from a tight dressing over the breast secondary to previous surgery. Snug breast supports have been incriminated, especially when used with large breasts.

The condition appears to be on the increase for it is hard to believe

that so characteristic an entity would have been overlooked until the past two or three decades. This suggests some new factor is operating. A likely explanation lies in a recent and popular type of brassiere which presses on the upper and outer quadrant of the breast as well as furnishing support below. This doubtless makes for a more arresting contour but the pressure exerted by the upper margin of the support where it



crosses the outer edge of the underlying pectoralis major muscle must retard the upward flow of blood in the costo-axillary veins with occasional thrombosis. In the case illustrated the upper limit of the thrombus coincided with the point of maximum pressure exerted by the elastic band that rimmed the top of the brassiere. Fortunately the condition is self-limited.

HARRY J. WARTHEN, M.D.

# *Society Activities . . .*

## **Albemarle.**

Officers for the Albemarle County Medical Society for 1962 are: president, Dr. Edward P. Cawley; vice-president and president-elect, Dr. Cary N. Moon, Jr.; and secretary-treasurer, Dr. William B. Pollard.

## **Alexandria.**

Dr. W. J. Weaver, Jr., has been installed as president of the Alexandria Medical Society. Dr. Colin MacRae has been named president-elect; Dr. Thomas F. McGough, vice-president; Dr. Bernard H. Zeavin, secretary; and Dr. C. A. Loughridge, treasurer.

## **Arlington.**

The Arlington County Medical Society has elected Dr. Howard O. Mott as president; Dr. Robert B. Neu, president-elect; Dr. Joseph O. Romness, vice-president; Dr. John J. Nolan, treasurer; and Dr. Sidney A. Tyroler, secretary.

## **Fairfax.**

At the December meeting of the Fairfax County Medical Society, Dr. Joseph A. Provenzano was installed as president. Dr. Robert O'Donnell was named president-elect; Dr. Kenneth Berger, secretary; and Dr. John Prominski, treasurer.

## **James River.**

The following officers were elected for the year 1962 at the January meeting of the James River Medical Society: president, Dr. E. J. Haden, and secretary-treasurer, Dr. J. H. Yeatman.

## **Newport News.**

Officers for the Newport News Medical

Society for 1962 are: president, Dr. A. C. Stanton, Jr.; vice-president, Dr. W. H. Huffstetler, Jr.; and secretary-treasurer, Dr. John M. Ratliff.

## **Richmond.**

Dr. John P. Lynch has been installed as president of the Richmond Academy of Medicine, succeeding Dr. Edwin L. Kendig, Jr. Dr. Kendig has become chairman of the board of trustees. Other officers are Dr. John M. Meredith, president-elect; Dr. Charles M. Nelson and Dr. Robert L. Bailey, Jr., vice-president; and Dr. Alston G. Bailie, sergeant-at-arms. Drs. Meredith Nelson, Richard A. Michaux, James B. Stone, and Robert E. Mitchell are members of the board.

## **Rockingham.**

Dr. George Andes is president of the Rockingham County Medical Society, and Dr. Richard Smith is secretary. Both are located in Harrisonburg.

## **Tazewell.**

Officers for the Tazewell County Medical Society for 1962 are Dr. C. H. Goodykoontz, president; Dr. Howard Scott, vice-president; and Dr. James M. Peery, secretary-treasurer.

## **Southern Medical Association.**

Dr. Daniel L. Sexton, St. Louis, has been selected president-elect of this Association, succeeding Dr. Fount Richardson, deceased. Dr. Sexton will assume the presidency at the annual meeting in Miami Beach, November 12-15.

# News . . .

## New Members.

The following new members were admitted into The Medical Society of Virginia during the month of January:

Henry Lynn Colvin, M.D., Manassas  
Louis MacFarland Crews, M.D.,  
Falls Church  
Thomas Harold Crowder, Jr., M.D.,  
South Boston  
Edward Mitchell Eppes, III, M.D.,  
Richmond  
Zeki Erim, M.D., Alexandria  
Werner John Gatzek, M.D., Saluda  
Walter Gad Heimann, M.D., Hampton  
Eugene Robert Jacobs, M.D., Arlington  
Wayne Lee Johnson, M.D., Charlottesville  
Elmer Richard King, M.D., Richmond  
Russell Samuel Leone, M.D., Fairfax  
John Anthony Mannick, M.D., Richmond  
George Margolis, M.D., Richmond  
Edmund Harrison Rucker, Jr., M.D.,  
Newport News  
Richard Brooks Stout, M.D., Richmond  
Paulus Clayton Taylor, M.D., Emporia  
Malcolm Tenney, Jr., M.D., Amherst

## Sons of Confederate Veterans.

Dr. E. Randolph Trice has been elected commander of the Lee-Jackson Camp of the Sons of Confederate Veterans, and Dr. Harry J. Warthen has been named second lieutenant commander. Dr. Henry W. Decker has been re-elected as surgeon of the Camp. All of these officers are from Richmond.

At the annual dinner meeting held in January, Dr. Warthen was the principal speaker, his subject being The Last Days of General Stonewall Jackson.

## Dr. Richard E. Palmer,

Alexandria, has been elected president of the American Society of Clinical Pathologists for 1962.

## Dr. Asa W. Viccellio,

Danville, has been appointed as medical director of Dan River Mills. He succeeds Dr. L. O. Crumpler who retired because of ill health.

## Dr. Gordon Shull,

Recently of Big Stone Gap, has moved to Wilson, New York, where he has opened his office for private practice.

## Officers of Medical Staffs.

Dr. Kenneth Cooper has been named president of the medical staff of Marshall Lodge Memorial Hospital, Lynchburg. Dr. R. V. Crowder, Jr., is vice-president, and Dr. Frank Hobbs, secretary.

Dr. Robert W. Alfriend is the new president of the medical staff of Leigh Memorial Hospital, Norfolk. Dr. Harry B. Taylor, Jr., is vice-president; Dr. Alvin Margolius, secretary-treasurer; and Drs. R. B. Henry, William Wiley, James Wolcott, and Oscar Diaz, chiefs of services.

Dr. J. Powell Anderson has been elected president of the medical staff of the Waynesboro Community Hospital, with Dr. Thomas L. Gorsuch as vice-president; Dr. Harvey B. Ryder, treasurer, and Dr. I. Earl Holmes, secretary.

## Memorial for Dr. Wilson.

The late Dr. N. G. Wilson has been honored by a memorial room at Leigh Memorial Hospital, Norfolk. The room will be used as a lounge for families of deceased or critically ill patients. Furnishings and renovations were made possible by the Wilson and Garnett Tri-Hi-Y groups at Maury High School. Dedication of the room was chosen as a club project and money was raised by a fashion show, silver tea, bake sales, card party and individual sales. These girls' or-

ganizations are named for their sponsors, Dr. Wilson's two daughters, Miss Margaret Wilson and Mrs. Theodore Garnett. Both are teachers at the school.

### **Dr. Blake Meador,**

Richmond, has been elected a Fellow of the American College of Angiology.

### **Infectious Syphilis.**

Since 1957, infectious syphilis has been increasing at an alarming rate in all races, sexes, ages, social groups, and geographic areas. Physicians who have not observed a single case of infectious syphilis in 20 years suddenly are finding it among their patients.

The Venereal Disease Program of the Public Health Service routinely abstracts current articles on venereal disease from almost 1,000 journals, both domestic and foreign. A publication entitled "Current Literature on Venereal Disease" including these abstracts is printed three or four times a year and indexed annually. It is distributed free of charge to physicians on their personal request.

If you wish to receive this publication, write to Communicable Disease Center, Atlanta 22, Georgia, attention Dr. William J. Brown, Chief Venereal Disease Branch, and request that your name be added to the mailing key for "Current Literature on Venereal Disease".

### **Evening Memorial Lecture Program.**

The Memorial Lecture Program of the University of Virginia, School of Medicine, will present the following programs for March and April:

March 19th—Staige D. Blackford Lectureship: Dr. Philip Y. Paterson, Department of Medicine, New York University School of Medicine, on Auto-Immune Disease.

March 16th—Dr. Philip P. Cohen, University of Physiological Chemistry, Univer-

sity of Wisconsin, on Some Aspects of Urea Biosynthesis.

April 2nd—Oscar Swineford Lectureship: Dr. Bram Rose, Royal Victoria Hospital, Montreal, Canada, the subject to be announced.

April 19th—Alpha Omega Alpha Lectureship: Dr. William Dameshek, Professor of Medicine, Tufts Medical School, on Hematologic Aspects of Auto-Immune Disease. This lecture will begin at 5:00 P.M.

### **Postgraduate Day Program**

The thirteenth annual postgraduate day program of the Roanoke Memorial Hospital will be held on March 15th.

The morning clinical session will be held in the hospital auditorium, beginning at 10:30, with the following case presentations:

Hepatorenal Syndrome and Ascites by Dr. Solomon Papper, Professor of Medicine, Medical College of Virginia.

A Gynecologic-Endocrine Problem by Dr. Robert W. Kistner, Department of Obstetrics and Gynecology, Harvard Medical School.

A Metabolic-Endocrine Problem by Dr. William Parson, Department of Medicine, University of Virginia.

Following lunch, the program will be:

Common Fluid and Electrolyte Problems by Dr. Papper.

Disorders of Calcium and Bone Metabolism by Dr. Parson.

Current Status of the Newer Progestational Agents by Dr. Kistner.

This program is approved by Category I Credit by the American Academy of General Practice.

### **Seminar on Arthritis and Rheumatic Disease.**

This post-graduate seminar of the Virginia Chapter and Roanoke Branch of the Arthritis and Rheumatism Foundation will

be held at the Hotel Roanoke, Roanoke, April 14-15. Registration will begin at 8:30 A.M., and the following program will begin at 9:30:

Clinical Features of Rheumatoid Arthritis—Dr. Russell Cecil, New York City.

Gold, Butazolidin and Anti-malarial Drugs in the Treatment of Rheumatoid Arthritis—Dr. Maxwell Lockie, Buffalo, N.Y.

Steroids in the Treatment of Rheumatoid Arthritis — Dr. Alfred Bollet, Charlottesville.

Intra-articular Treatment of Rheumatoid Arthritis—Dr. Ernest Brown, Philadelphia.

Toxic Reactions Encountered in the Treatment of Rheumatoid Arthritis—Dr. Elam Toone, Richmond.

A panel discussion will be followed by lunch and the afternoon program will resume at 1:30:

Rheumatic Fever—Dr. Currier McEwen, New York City.

Osteoarthritis — Dr. Oscar Swineford, Charlottesville.

Gout—Dr. Darrell Crain, Washington, D. C.

X-ray Diagnosis of Arthritis—Dr. William Martel, Ann Arbor, Mich.

Surgical Treatment of Arthritis — Dr. Lee Ramsay Straub, New York City.

Physical Medicine in the Treatment of Arthritis — Dr. Frederick Vultee, Richmond.

On the 15th, the program will begin at 10:00 A.M., concluding with a panel discussion at noon:

Systemic Lupus Erythematosus and Other Collagen Diseases—Dr. Lawrence Shulman, Baltimore.

Non-articular Rheumatism—Dr. Richard Freyberg, New York City.

Rheumatoid Spondylitis and Juvenile Rheumatoid Arthritis—Dr. Robert Irby, Richmond.

Laboratory Tests in the Diagnosis of

Rheumatic Diseases—Dr. R. W. Lamont-Havers, New York City.

Category II Credit of the American Academy of General Practice has been approved for this program.

Further information may be obtained from John A. Rudd, Executive Director, Virginia Chapter Arthritis and Rheumatism Foundation, 604 Church Street, Lynchburg.

### Duchenne-Type Muscular Dystrophy.

Dr. Richard F. Shaw, Assistant Professor of Genetics at the University of Virginia, would like to thank the medical profession for their special help in returning several questionnaires and letters sent out in connection with the research project on Duchenne-type muscular dystrophy which is being conducted at the University. There has been a very high return rate and as a result of this cooperativeness, very good casefinding has been achieved—some families having been reported as many as eight times.

Serum enzyme levels in the blood are proving very promising as a possible means of diagnosis and detecting carriers. The State Health Department is going to draw blood for these tests. All family doctors in the records will be notified of the intention to draw blood beforehand. Whenever this blood drawing is not advisable, the doctor should notify Dr. Shaw.

Dr. Shaw is still looking for any cases, diagnoses, or that had onset before November 1, 1961, that may have been missed. Duplicate ascertainties by different sources are desirable, too. Write or phone collect Charlottesville 292-6109—Genetics Research at the Children's Rehabilitation Center.

### Wanted.

Roentgenologist needed for group practice in Southwestern Virginia. Answer #25, care Virginia Medical Monthly, 4205 Dover Road, Richmond, Virginia. (Adv.)

### **Wanted.**

Obstetrical-gynecological man for group practice. Board eligible or certified. To head department. Southwestern Virginia. Reply to #20, care Virginia Medical Monthly, 4205 Dover Road, Richmond, Virginia. (*Adv.*)

### **Situation Wanted.**

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## Obituaries . . .

### **Dr. Archibald P. Osborne,**

Well-known physician of Berryville, died January 19th following a heart attack. He was eighty-seven years of age and graduated from the Medical College of Virginia in 1899. Dr. Osborne had practiced continuously in Clarke County for more than sixty years and had achieved nationwide acclaim for having delivered more than 4100 babies without the loss of a mother. He was the oldest surviving member of the original staff of the Winchester Memorial Hospital. He took his first patient to that hospital on St. Patrick's Day in 1903. Dr. Osborne was known as the longest choir singing physician, having been the leading tenor in his Church throughout his residence in the County.

Dr. Osborne had been a member of The Medical Society of Virginia for fifty-eight years.

He and Mrs. Osborne celebrated their sixtieth wedding anniversary on October 1, 1961. She survives with two sons.

### **Dr. Walter Edward Vest,**

Huntington, West Virginia, died January 29th. He was seventy-nine years of age and a graduate of the Medical College of Virginia in 1909. Dr. Vest joined The Medical Society of Virginia in 1909 when he was located at Meherrin. He then moved to Huntington where he was consulting internist with the C. & O. Hospital. Dr. Vest had served as a member of the House of Delegates of the American Medical Association and was a past president of the Southern Medical Association. He was made a member of the Fifty Year Club of The Medical Society of Virginia in 1959.

### **Dr. Lewis Tilghman Stoneburner, Jr.,**

Prominent physician of Richmond, died January 29th after an illness of several

weeks. He was seventy-seven years of age and graduated from the Medical College of Virginia in 1914. He served as an assistant professor of medicine at the College.

The Stoneburner Lecture Series at the Medical College of Virginia were established in memory of his son, Dr. Stoneburner, III, who was reported missing in action while on a flight over the Mediterranean Sea during World War II and was never found.

Dr. Stoneburner had been a member of The Medical Society of Virginia for forty-seven years.

His wife, four sons and a daughter survive him. Two of his sons are doctors—Richard G. of Burlington, N. C., and John M. of Danville. A brother is Dr. Ralph W. Stoneburner of Edinburg.

### **Dr. Clavel Tyrus Wilfong,**

Well-known physician of Richmond, died January 20th, at the age of sixty-nine. He received his medical degree from the University of Louisville in 1917 and served as a medical officer in the army during World War I. Dr. Wilfong was with the United States Public Health Service until 1923, following which he became chief medical officer for the Veterans Bureau in Roanoke. In 1935 he was named outpatient neuro-psychiatrist and chief of acute services for the VA Hospital in Roanoke and ten years later was appointed to the same post at McGuire VA Hospital in Richmond. Dr. Wilfong retired in 1950 and maintained a private practice in neurology and psychiatry. He had been a member of The Medical Society of Virginia for forty years.

His wife and two daughters survive him.

### **Dr. Joseph Hamilton Smith,**

Prominent physician of Farmville, died January 13th. He was sixty-eight years of age and graduated in medicine from the

University of Virginia in 1921. Dr. Smith began his practice in Farmville in 1931. He was active in all phases of community and civic life and was a charter member of the Farmville Rotary Club and a member of the Prince Edward County Democratic Committee. Dr. Smith joined The Medical Society of Virginia in 1931.

His wife and a daughter survive him.

The following Memorial was adopted by the Medical Staff of the Southside Community Hospital:

Joseph Hamilton Smith—Gentleman, Scholar, Physician, and Friend—died on January 13th, in Southside Community Hospital, Farmville. It is fitting that he should have spent his last days in the institution to the development of which he gave so largely of his life. It is a tribute to this hospital and to his colleagues that he insisted that he be allowed to stay here and receive his indicated treatment from those with whom he had labored so long and so well.

It can be said without any fear of contradiction and without any fear of detraction from others who have given greatly that Dr. Smith contributed more than any other one man to the growth, development, quality of service, training programs, and present status of Southside Community Hospital through his thirty years of devoted service to it. Perhaps the most satisfying accolade to his life was in the completion of the obstetrical department of the Mettauer wing of the hospital, a project to which he brought all of his personal influence and to which he gave generously, not only financially but of himself.

Other historians will note this man's birth at Shadwell in Albemarle County of a proud lineage, his boyhood in Charlottesville, his preliminary education in the Randolph-Macon system, his years of service as a teacher in Virginia's schools, and finally his graduation in medicine from the University of Virginia in 1921. He was a proud alumnus in whom his Alma Mater must take equal pride. These historians will also note his years of service to humanity in the practice of general medicine in our neighboring State of West Virginia. These years were invaluable in service and experience. They also brought to him the joy of fulfillment in his personal life, his marriage with Hester McLaren.

We would like to reflect briefly on this unusual man's thirty years of living and working with us in Farmville, in Prince Edward County, and more particularly at Southside Community Hospital. That he was an unusual man was immediately recognized by all who came in contact with him. His inquiring

mind, without intruding, but with persistent patience, and with a phenomenal memory allowed him to reach the truth and the essence of any problem presented to him, whether it were medical or personal. His was the nature and understanding which invited confidence, a facet of his character which we are sure afforded him much personal satisfaction. His advice professionally and personally was always thoughtful and sound. He was indeed a successful clinical psychiatrist.

In keeping with Dr. Joe Smith's active interest in all those with whom he worked was his particular interest and affection for the young physicians who came to us as interns and residents during the years in which we enjoyed such a program. He took a great personal pride and interest in knowing these young men and making their stay with us as pleasant and as profitable for them as possible. He not only gave them good instruction, but did a lot of little personal things which endeared him to them and reflected itself in the quality of their service to the hospital. His next best car was always at their call. He frequently advised them financially and with any problem which they brought to him. He would often allow these young men to sign out on him for a social occasion thereby earning the endearing title of Substitute House Officer for Southside Community Hospital. We know that these young men went out into life with something intangible which was very dear to them.

Shortly after becoming a member of the Staff of Southside Community Hospital, Dr. Smith realized the need for improvement in the field of obstetrics, not only here but generally. By means of post graduate periods of instruction and by omnivorous reading of the literature, as well as an increasing assumption of a responsible role in the active practice of obstetrics here, he became the progenitor of improved obstetrical methods and practice among his colleagues. He may not have contributed greatly to the literature, but he gleaned heavily from it, and had the wisdom to hold on to the good and quickly eject or deny the radical and the unsound. It can honestly be said that, for the greater part of Dr. Joe Smith's professional life, he strove mightily—physically, mentally, and with kindly emotion—to improve the welfare and safeguard the life of the pregnant woman and her unborn child. This was the ultimate aim of this man's professional life.

Joe Smith did not live a detached life. He became a part of all that he knew, all that he saw, all that he heard, and all that he touched. His chief joy in life was communication. Therefore, it can be well understood that as his last illness began to encroach upon his most cherished possession, he fought against it until the very end.

The community has lost a valued citizen and a

rock of intellectual integrity. His family has lost its beloved Head. The Staff has lost an esteemed and respected colleague, and a multitude of people have lost that rarest of all things, a friend who knew them well, yet loved them. Certainly he shall be long remembered.

A. TYREE FINCH, *Chairman*  
LEWIS E. WELLS, *Secretary*

### **Dr. Faith Fairfield Gordon,**

Richmond, died February 4th. She was sixty-three years of age and a native of Spokane, Washington. She was a graduate of the Boston University School of Medicine in 1923. Dr. Gordon was associated with the Memorial Guidance Clinic in Richmond from 1934 to 1938 when she became physician at Hollins College and a director of the Lynchburg Guidance Clinic. She returned to Richmond in 1954 and was named clinical director of the Clinic in 1957. Dr. Gordon had been a member of The Medical Society of Virginia for twelve years.

Her husband and a son survive her.

### **Dr. George W. Parson,**

Texarkana, Texas-Arkansas, was drowned on December 18th while duck hunting at his lodge. He was a native of Stony Creek, Virginia, and sixty-four years of age. Dr. Parson received his degree from the Medical College of Virginia in 1922 and practiced in Virginia until 1926.

### **Dr. Wilson.**

Dr. Nicholas George Wilson of Norfolk, died November 30, 1961, in the Norfolk General Hospital

of bronchial pneumonia. He was 90 years of age and had practiced medicine 66 years.

He was the widower of Beulah Murray Halstead Wilson who died in 1957. He is survived by three children, five grandchildren, and six great grandchildren.

Dr. Wilson graduated in Medicine at the University of Maryland, and interned at the University Hospital. After finishing his training he located in South Norfolk in 1895. This was in the horse and buggy days and muddy roads. He did general practice in South Norfolk until 1914. At this time he moved to Norfolk and confined his work to internal medicine. After removing to Norfolk, Dr. Wilson associated himself with Dr. Charles R. Grandy, spending much of his time at the tuberculosis clinic. He remained on the Anti-Tuberculosis Board until it was taken over by the City.

Dr. Wilson was a very devoted member of the Ghent Methodist Church and a regular attendant. He was a Member of the Board of Stewards from the time the new church was built, which was around 1920, and Chairman of the Board of Trustees until his death.

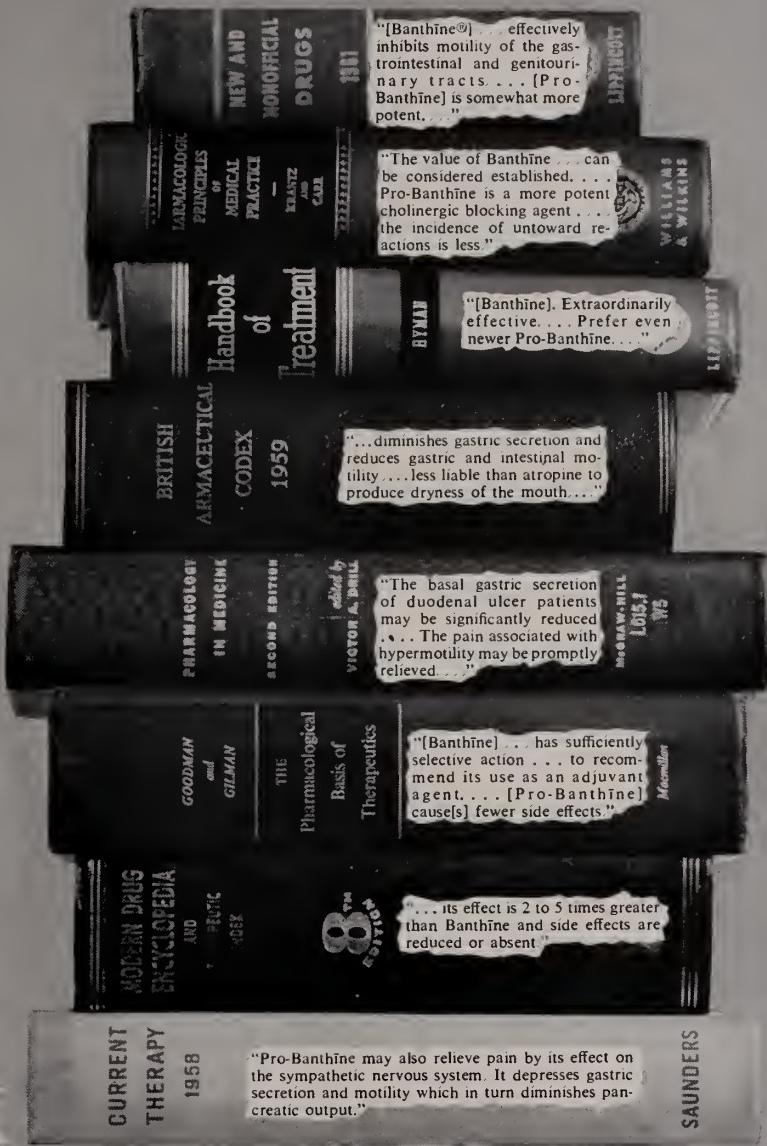
He was a Past President of the Norfolk County Medical Society, a member of The Medical Society of Virginia and the American Medical Association. He was also member of the Staffs of the Norfolk General Hospital, the DePaul and Leigh Memorial Hospital.

Dr. Wilson was greatly admired and loved by his many patients. He respected and loved them, and he loved his church.

THEREFORE BE IT RESOLVED That the Norfolk County Medical Society record these expressions as a permanent memorial to the life of Dr. Nicholas George Wilson. That a copy of these Resolutions be sent to his family and The Virginia Medical Monthly.

DR. C. LYDON HARRELL, *Chairman*  
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DR. R. L. PAYNE

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# "but why don't you tell my patients...?"

We pharmaceutical manufacturers, over the past several years and in various ways, have been trying to tell the story of the drug industry's role as a member of the American health team, and thus to correct certain unfortunate misconceptions. And all along we have looked upon you of the medical profession, on whose good will we are so dependent, as perhaps our chief audience.

But now we wonder... because so many of you have said to us lately, either orally or in writing, "Why are you telling us this? Our patients are the ones who really need to hear this story."

Thank you for pointing out this need; and for the aid some of you have already given us. We think we can now be of still more help in

answering many of the questions your patients are asking:—

A good number of us have Speakers Bureaus. If you will designate the place and time, we will have an industry speaker on hand to address any favorite organization of yours... be it a civic, political, or church group; your local PTA; a social club, or a fraternal order.

You have only to send a letter or post card, giving the particulars, to the Office of Public Information, Pharmaceutical Manufacturers Association, 1411 K Street, N.W., Washington 5, D.C. (or phone, National 8-6435). They will make the necessary arrangements\* (or promptly let you know if there's any hitch).

\*But please try to give at least three weeks' notice.





### *in arthritis: vitamins are therapy*

In dealing with the chronic stress of arthritis the physician often faces the problem of nutritional imbalance. High potency B and C supplementation is needed for rapid replenishment of tissue stores of these water-soluble vitamins. STRESSCAPS meet this need and help support the natural metabolic defenses in the disease. Supplied in decorative "reminder" jars of 30 and 100.

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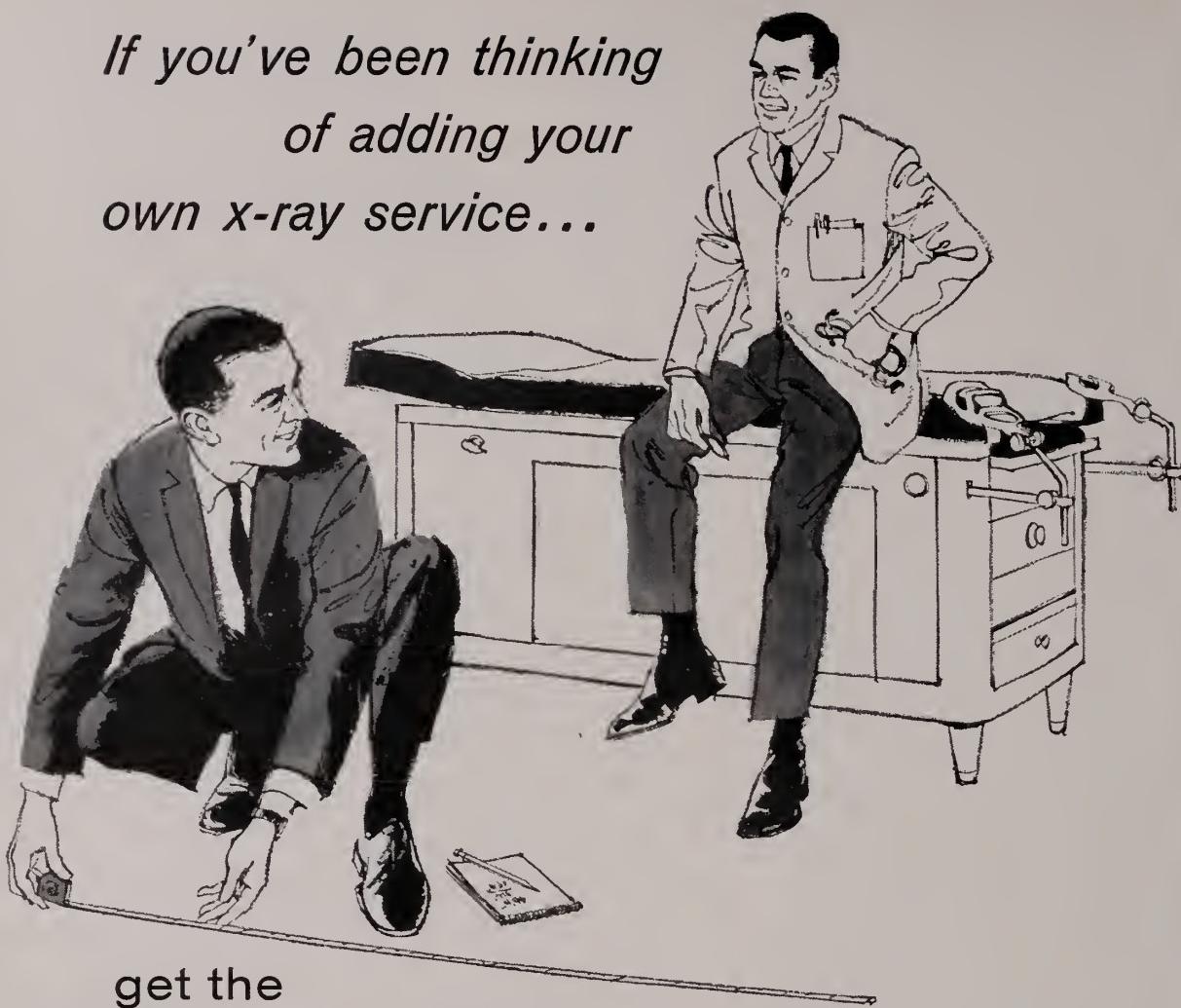
#### Each capsule contains:

Vitamin B <sub>1</sub> (Thiamine Mononitrate)	10 mg.
Vitamin B <sub>2</sub> (Riboflavin)	10 mg.
Niacinamide	100 mg.
Vitamin C (Ascorbic Acid)	300 mg.
Vitamin B <sub>6</sub> (Pyridoxine HCl)	2 mg.
Vitamin B <sub>12</sub> Crystalline	4 mcgm.
Calcium Pantothenate	20 mg.

Recommended intake: Adults, 1 capsule daily, or as directed by physician, for the treatment of vitamin deficiencies.

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VIRGINIA MEDICAL MONTHLY



# Calms the Tense, Nervous Patient in anxiety and depression

The outstanding effectiveness and safety with which Miltown calms tension and nervousness has been clinically authenticated by thousands of physicians during the past six years. This, undoubtedly, is one reason why meprobamate is still the most widely prescribed tranquilizer in the world.

Its response is predictable. It will not produce unpleasant surprises for either the patient or the physician. Small wonder that many physicians have awarded Miltown the status of a proven, dependable friend.

## Miltown®

meprobamate (Wallace)

**Usual dosage:** One or two 400 mg. tablets t.i.d.

**Supplied:** 400 mg. scored tablets, 200 mg. sugar-coated tablets; bottles of 50. Also as MEPROTAB®—400 mg. unmarked, coated tablets; and in sustained-release capsules as MEPROSPAN®-400 and MEPROSPAN®-200 (containing respectively 400 mg. and 200 mg. meprobamate).

**WALLACE LABORATORIES**  
*Cranbury, N. J.*

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Clinically proven  
in over 750  
published studies

- 1 Acts dependably — without causing ataxia or altering sexual function
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- 3 Does not muddle the mind or affect normal behavior

# *The cigarette that made the filter famous!*



Kent's development of the "Micronite" filter revolutionized the cigarette industry. Shortly after introduction of Kent with its famous filter, the swing to filter cigarettes got started in earnest. And no wonder. Kent with the "Micronite" filter refines away harsh flavor, refines away hot taste, makes the taste of a cigarette mild and kind.

Yes, Kent is kind-tasting to your taste buds, kind-tasting to your throat. Your taste buds become clear and alive with Kent.

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**Your taste buds will tell you why  
you'll feel better about smoking  
with the taste of Kent.**

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## If you had to make your own children's multivitamins

...chances are you'd try to make them very much like our new **VI-DAYLIN® CHEWABLE** with Entrapped Flavor. Entrapped Flavor means a better tasting chewable children's multivitamin; one with no vitamin aftertaste. Here's why: 1. We coat all the vitamins in a digestible film that does not dissolve until it reaches the gastrointestinal tract. This means that unpleasant strong vitamin tastes are not released in the mouth, but in the g-i tract where they are most quickly absorbed. 2. We make certain that every Vi-Daylin Chewable tablet tastes citrus sweet and good to every patient, every time; we coat the flavoring oils in each tablet in a water soluble film. This film dissolves immediately in the mouth, releasing the full bouquet of our citrus-candy flavoring agents. Now you know why little patients always taste the flavor, never the vitamins, when you prescribe new Vi-Daylin Chewable. And the formula's all you'd expect, with reasonable amounts of A and D. Taste test them yourself and you'll prescribe **VI-DAYLIN CHEWABLE** regularly and soon.



# Profile of a multivitamin



## New Vi-Daylin **Chewable** —with entrapped flavor

### New Formula

In recognition of recent medical thinking, we've reduced the vitamin D in our formula from 20 mcg. (800 units) to 10 mcg. (400 units). At the same time, we've increased the vitamin C content from 40 mg. to 50 mg. per tablet and per 5-cc. lemon-candy teaspoonful.

### All Other Elements Remain at Their Previous Level.

Vitamin A (3000 units) .... 0.9 mg.  
Thiamine Mononitrate .... 1.5 mg.  
Riboflavin ..... 1.2 mg.

Cobalamin (B<sub>12</sub>) .... 3 mcg.  
Nicotinamide ..... 10 mg.  
Pyridoxine Hydrochloride .... 1 mg.

### New Low Price

In quantities of 100 tablets our new Chewable costs less than 4¢ a tablet and the normal dosage is one tablet daily. No financial hardship for your patients when you prescribe or recommend Vi-Daylin.

### New Shape, New Color, New Bottle

New Vi-Daylin Chewable tablets are football shaped. This shape got a high degree of acceptance in our taste-tests and

seems to have an intrinsic interest for children. The orange color ties in with the mild, sweet citrus flavor. And the wide-mouthed new bottle looks handsome on the table.

### Taste-Test New Vi-Daylin Chewable Yourself

Won't you taste-test new Vi-Daylin Chewable multivitamins yourself? We're certain you'll be pleasantly surprised at their sweet good taste. They're the candy-flavored multivitamins with *entrapped flavor* . . . little folks taste the candy flavor, never the vitamins.



**brighten the outlook of your aging patients**



*A new geriatric tonic and psycho-stimulant*

In the "aging" patient, Nicozol Complex brightens the outlook . . . helps overcome lassitude and fatigue, thus improves mental and physical well-being.

• improves mental acuity • improves protein and calcium metabolism • reduces confusion and disorientation • improves appetite—without excitation, depression or other untoward effects.

**Supplied:** Nicozol Complex, a pleasant tasting elixir, in bottles of 1 pint and 1 gallon.

**Dosage:** One teaspoonful (5 cc.) three times daily, before meals. (Female patients should follow each 21 day course with a 7 day interval without Nicozol Complex.)

*Write for professional sample and literature*

Each 15 cc. (3 teaspoonfuls) contains:  
Pentylene Tetrazol ..... 150 mg.  
Nicotinic Acid ..... 75 mg.  
Methyl Testosterone ..... 2.5 mg.  
Ethinyl Estradiol ..... 0.01 mg.  
Thiamine Hydrochloride ..... 6 mg.  
Riboflavin ..... 3 mg.  
Pyridoxine Hydrochloride ..... 6 mg.  
Vitamin B<sub>12</sub> ..... 2 mcg.  
Folic Acid ..... 0.33 mg.  
Panthenol ..... 5 mg.  
Choline Bitartrate ..... 20 mg.  
Inositol ..... 15 mg.  
L-Lysine Monohydrochloride ..... 100 mg.  
Vitamin E (a-Tocopherol Acetate) ..... 3 mg.  
Iron (as Ferric Pyrophosphate) ..... 15 mg.  
Trace Minerals as: Magnesium 2 mg.;  
Manganese 1 mg.; Zinc 1 mg.



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**NICOZOL® COMPLEX**

Winston-Salem, N.C.

Formerly Drug Specialties, Inc.

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**Keep the rheumatic man in motion!**

DELENAR loosens the rheumatic grip on muscles and joints, starts them functioning again—first by a direct relaxant action on skeletal muscle, again by its specific analgesic effects. And, while immediate symptomatic relief restores motion, underlying inflammation is reduced with the low-dosage corticosteroid.

Now you can restore comfortable motion safely, surely with DELENAR in rheumatoid arthritis/traumatic arthritis/early osteoarthritis/spondylitis/fibrositis/myositis/bursitis/tenosynovitis.

**Formula:**

Orphenadrine HCl .....	15 mg.....	Proved muscle relaxant to relax spasm
Aluminum Aspirin .....	375 mg.....	Fast analgesic relief of motion-stopping pain
Dexamethasone*	0.15 mg.....	Low-dosage anti-inflammatory steroid

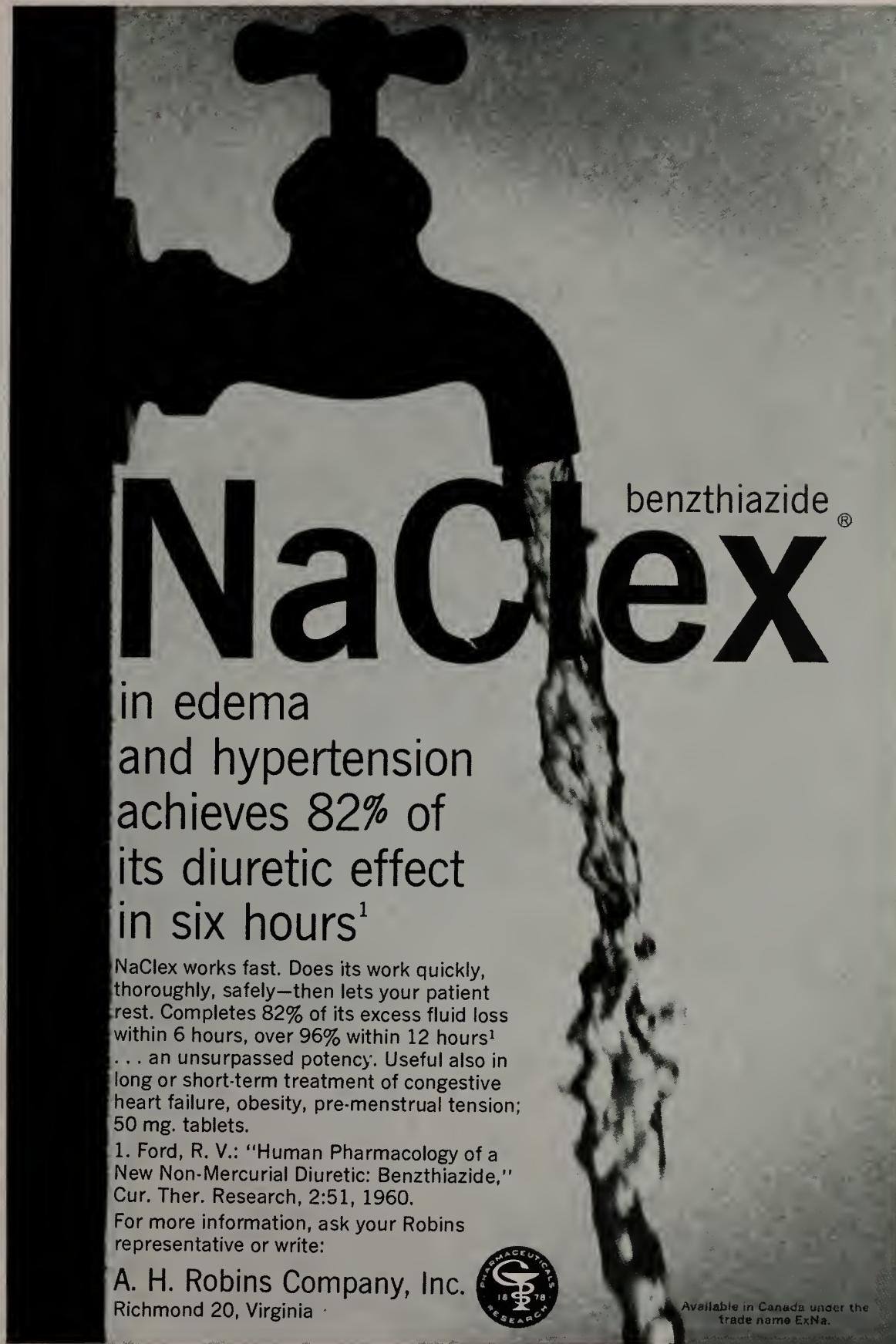
For complete details, consult latest Schering literature available from your Schering Representative or Medical Services Department, Schering Corporation, Bloomfield, N. J. **Bibliography:** 1. Ernst, E. M.: Pennsylvania M.J. 63:708 (May) 1960. 2. Settel, E.: Clin. Med. 7:1835 (Sept.) 1960.

\*Deronil® brand of dexamethasone

H-415

**loosens the rheumatic grip on muscles and joints**

**Delenar®** brand of antirheumatic preparation



# NaClex

benzthiazide<sup>®</sup>

in edema  
and hypertension  
achieves 82% of  
its diuretic effect  
in six hours<sup>1</sup>

NaClex works fast. Does it work quickly, thoroughly, safely—then lets your patient rest. Completes 82% of its excess fluid loss within 6 hours, over 96% within 12 hours<sup>1</sup> . . . an unsurpassed potency. Useful also in long or short-term treatment of congestive heart failure, obesity, pre-menstrual tension; 50 mg. tablets.

1. Ford, R. V.: "Human Pharmacology of a New Non-Mercurial Diuretic: Benzthiazide," Cur. Ther. Research, 2:51, 1960.

For more information, ask your Robins representative or write:

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Available in Canada under the  
trade name ExNa.



"All the world's a stage..  
And one man in his time  
plays many parts,  
His acts being seven ages..."\*

\**As You Like It, Act II, Sc. 7*



through all seven ages of man

# VISTARIL®

effective anxiety control  
with a wide margin of safety

in the "frantic forties"—For many patients in their "frantic forties," the pace never slackens—may even accelerate—while tensions multiply and physical resources dwindle. Out of this seedbed of stresses and anxieties grow much of the alcoholism, psychosomatic illness, and sympathetic overactivity of the middle years.

In each of these areas, VISTARIL is often effective alone or as an adjunct to other therapy. For example, in his series of 67 patients, King<sup>1</sup> found that 62 showed remission of anxiety, tension, nervousness and insomnia, as well as alleviation of symptoms associated with various functional and psychophysiological disturbances. He concludes that VISTARIL is well suited for use in the practice of internal medicine.

In the emergent situation, VISTARIL, administered parenterally, is a valuable aid to the physician in managing patients who escape psychic conflict via alcohol. According to Weiner and Bockman,<sup>2</sup> who obtained beneficial results in 81% of 175 patients studied, hydroxyzine (VISTARIL) may well be considered a tranquilizer of choice in the management of the acutely agitated alcoholic.

1. King, J. C.: Int. Rec. Med. 172:669, 1959. 2. Weiner, L. J., and Bockman, A. A.: Sci. Exhibit, A.M.A., Ann. Meet., New York City, June 26-30, 1961.

VISTARIL® CAPSULES AND ORAL SUSPENSION

HYDROXYZINE PAMOATE

VISTARIL® PARENTERAL SOLUTION

HYDROXYZINE HYDROCHLORIDE

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SEE "IN BRIEF" ON THE NEXT PAGE.

IN BRIEF

## VISTARIL®

VISTARIL, hydroxyzine pamoate (oral) and hydroxyzine hydrochloride (parenteral solution), is a calming agent unrelated chemically to phenothiazine, reserpine, and meprobamate.

VISTARIL acts rapidly in the symptomatic treatment of a variety of neuroses and other emotional disturbances manifested by anxiety, apprehension, or fear—whether occurring alone or complicating a physical illness. The versatility of VISTARIL in clinical indications is matched by wide patient range and a complete complement of dosage forms. The calmative effect of VISTARIL does not usually impair discrimination. No toxicity has been reported with the use of VISTARIL at the recommended dosage, and it has a remarkable record of freedom from adverse reactions.

**INDICATIONS:** VISTARIL is effective in premenstrual tension, the menopausal syndrome, tension headaches, alcoholic agitation, dentistry, and as an adjunct to psychotherapy. It is recommended for the management of anxiety associated with organic disturbances, such as digestive disorders, asthma, and dermatoses. Pediatric behavior problems and the emotional illnesses of senility are also effectively treated with VISTARIL.

**ADMINISTRATION AND DOSAGE:** Dosage varies with the state and response of each patient, rather than with weight, and should be individualized for optimum results. The usual adult oral dose ranges from 25 mg. t.i.d. to 100 mg. q.i.d. Usual children's oral dose: under 6 years, 50 mg. daily in divided doses; over 6 years, 50-100 mg. daily in divided doses.

Parenteral dosage for adult psychiatric and emotional emergencies, including acute alcoholism: I.M.—50-100 mg. Stat., and q.4-6h., p.r.n. I.V.—50 mg. Stat., maintain with 25-50 mg. I.V. q.4-6h., p.r.n.

**SIDE EFFECTS:** Drowsiness may occur in some patients; if so, it is usually transitory, disappearing within a few days of continued therapy or upon reduction of dosage. Dryness of mouth may be encountered at higher doses.

**PRECAUTIONS:** Drowsiness may occur in some patients. The potentiating action of hydroxyzine should be taken into account when the drug is used in conjunction with central nervous system depressants. Do not exceed 1 cc. per minute I.V. Do not give over 100 mg. per dose I.V. Parenteral therapy is usually for 24-48 hours, except when, in the judgment of the physician, longer-term therapy by this route is desirable.

**SUPPLIED:** VISTARIL Parenteral Solution (hydroxyzine hydrochloride)—10 cc. vials, 25 mg. per cc. and 50 mg. per cc.; 2 cc. ampules, 50 mg. per cc. VISTARIL Capsules (hydroxyzine pamoate)—25, 50, and 100 mg. VISTARIL Oral Suspension (hydroxyzine pamoate)—25 mg. per 5 cc. teaspoonful.

More detailed professional information available on request.

Science for the world's well-being®



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## For the Discriminating Eye Physician

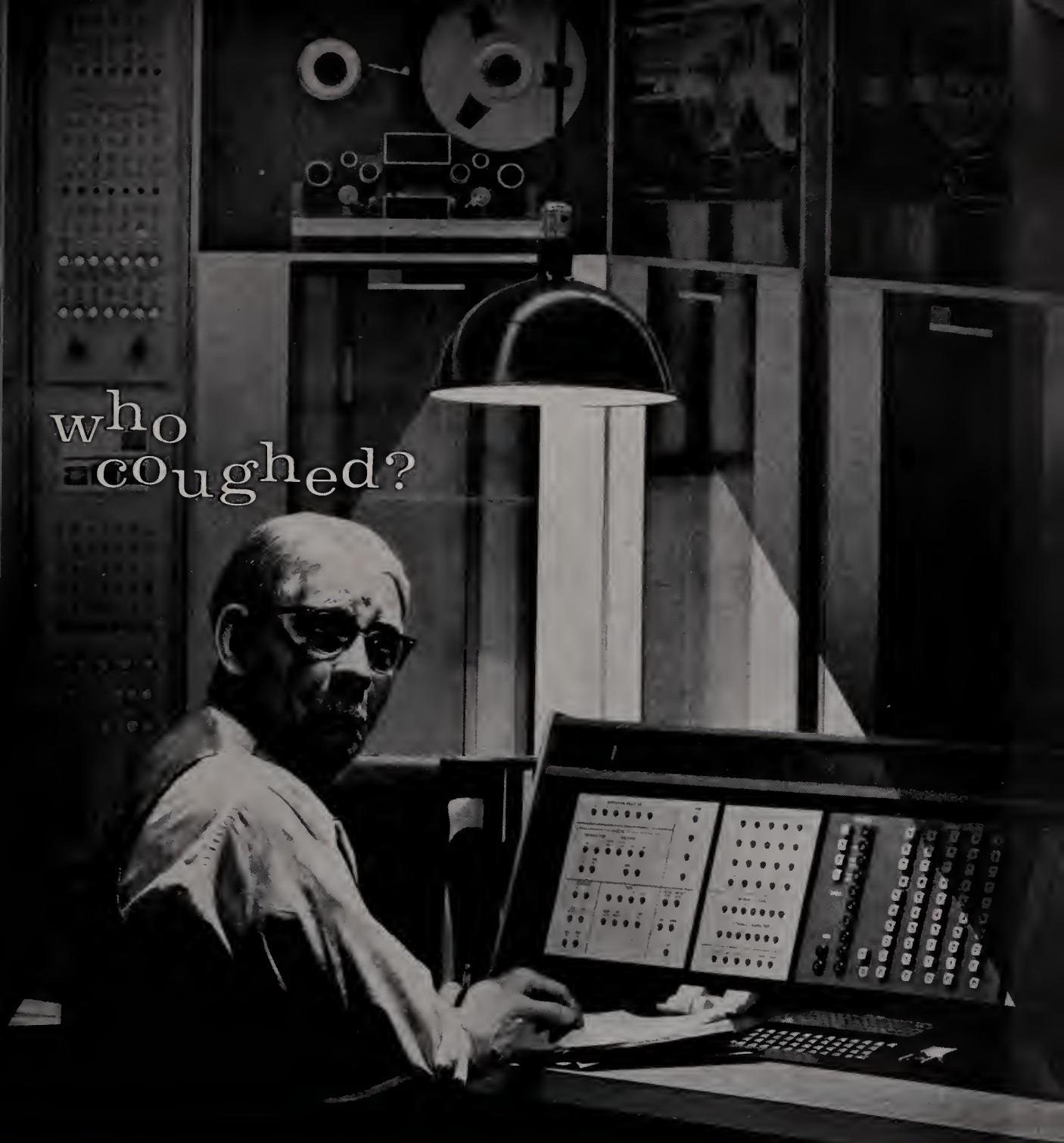
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# HYCOMINE® Syrup

THE COMPLETE Rx FOR COUGH CONTROL  
*cough sedative / expectorant  
antihistamine / nasal decongestant*

■ relieves cough and associated symptoms  
in 15-20 minutes ■ effective for 6 hours or  
longer ■ promotes expectoration ■ rarely  
constipates ■ agreeably cherry-flavored  
Each teaspoonful (5 cc.) of HYCOMINE® Syrup  
contains: Hycodan®

Dihydrocodeinone Bitartrate . . . . .	5 mg.	6.5 mg.
(Warning: May be habit-forming)		
Homatropine Methylbromide . . . . .	1.5 mg.	
Pyrilamine Maleate . . . . .	12.5 mg.	
Phenylephrine Hydrochloride . . . . .	10 mg.	
Ammonium Chloride . . . . .	60 mg.	
Sodium Citrate . . . . .	85 mg.	

Average adult dose: One teaspoonful after meals  
and at bedtime. May be habit-forming. Federal law  
allows oral prescription.



Literature on request  
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**They deserve a free world.** And you can help give it to them by building for the future with U.S. Savings Bonds.



**This man has world-wide ambitions.** One of the best ways to keep him in check is to keep up our financial strength—as individuals and as a Nation.

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With your dollars and cents, any architect can specify plenty of bricks, plaster and paint. But he can't include specifications for the kind of world your house will go up in.

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**T**extbook after textbook, article after article and experience in practice after practice consistently have demonstrated the capacity of Demerol to produce satisfactory analgesia without weakening the intensity of uterine contractions. In fact, many observers have reported an apparent shortening of labor, particularly in the primipara.

Because it is well tolerated by both the mother and the newborn child, Demerol is generally considered one of the safest analgesics for use in obstetric practice.

In addition to satisfactory analgesia, a moderate sedative effect is obtained with large doses, and sleep is frequently induced between pains.

In 13,000 deliveries reported by 158 physicians, "Demerol was unquestionably the narcotic of choice during labor."

(Questionnaire, The Maternal and Child Welfare Committee, South Dakota State M. A., 1958)<sup>1</sup>

"Demerol is our drug of choice for analgesia during labor."

(Posner, Fielding and Posner, Harlem Hospital, New York City)<sup>2</sup>

Demerol in combination with scopolamine "... offers the best means of securing analgesia and amnesia in labor with the least risk to the mother and child. ... Often one is amazed at the manner in which the cervix melts away under this form of medication."

(Beck and Rosenthal, State University of New York)<sup>3</sup>



**DEMEROL®**  
THE ANALGESIC OF CHOICE  
IN OBSTETRIC PRACTICE

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*For a Smooth Delivery...*

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BRAND OF MEPERIDINE HYDROCHLORIDE

**THE ANALGESIC OF CHOICE IN OBSTETRIC PRACTICE**



**DEPENDABLE ANALGESIA AND AMNESIA**

*Demerol with Scopolamine*

"When combined with scopolamine, it [Demerol] can produce satisfactory amnesia-analgesia in over 90% of the mothers during labour."

(Hershenson and Reid, *Boston Lying-in Hospital and Harvard M. Sch.*)<sup>4</sup>

In one of the most commonly used technics, an initial dose of 100 mg. of Demerol and 1/150 grain of scopolamine is given intramuscularly when labor is established. Subsequently, 100 mg. of Demerol are given every four hours and 1/200 grain of scopolamine every three hours. "Within 15 or 20 minutes the pain is relieved and neither the frequency nor the intensity of the uterine contractions are diminished."

(Beck and Rosenthal)<sup>3</sup>

Demerol is "...an analgesic drug which relieves pain about as well as does morphine, and it has in addition an antispasmodic action which makes it a good preparation for use during labor.... It may be given alone but its effect is enhanced when it is used in combination with scopolamine, and the resultant amnesic effect is excellent."

(Titus, Pittsburgh)

**SIDE EFFECTS AND CONTRAINDICATIONS:** Demerol hydrochloride is generally well tolerated and nontoxic in therapeutic doses. Side effects occur more frequently in ambulatory patients (who should therefore be specially cautioned) than in those confined to bed. Dizziness is the most common reaction. Nausea or vomiting occurs less frequently than after administration of morphine. Flushing of the face, sweating and dryness of the mouth are sometimes noted. More severe reactions are characterized by great weakness, syncope, profuse perspiration, marked dizziness, and nausea and vomiting. They usually can be prevented if the patient lies down promptly at the onset of side effects. Tolerance to side effects usually develops quickly if medication is continued in small doses (25 mg.). In contrast to morphine, respiratory depression occurs infrequently.

1. Ranney, Brooks: *South Dakota J. Med. & Pharm.* 11:479, Dec., 1958.
2. Posner, L. B.; Fielding, W. L., and Posner, A. C.: *Obst. & Gynec.* 2:81, July, 1953.
3. Beck, A. C., and Rosenthal, A. H.: *Obstetrical Practice*, ed. 7, Baltimore, The Williams & Wilkins Company, 1958, pp. 1029, 1030.
4. Hershenson, B. B., and Reid, D. E.: *Bull. Narcotics* 8:36, July-Sept., 1956.
5. Titus, Paul: *The Management of Obstetric Difficulties*, ed. 5, St. Louis, C. V. Mosby Co., 1955, p. 617.

PRINTED IN U. S. A. REVISED DECEMBER 1961 (1613H)

**DEMEROL Hydrochloride Solutions / for Parenteral Use:**

50 mg. per ml.: Ampuls of 0.5, 1, 1.5 and 2 ml. (25 to 100 mg.); vials of 10 and 30 ml.; disposable syringes of 1 ml.

75 mg. per ml.: Disposable syringes of 1 ml.

100 mg. per ml.: Ampuls of 1 ml.; vials of 20 ml.; disposable syringes of 1 ml.

pH of Demerol 5% and 10% solutions in ampuls and vials is adjusted between 4.5 and 6.0 with sodium hydroxide or hydrochloric acid. Multiple dose vials of Demerol solution also contain metacresol 0.1 per cent as preservative.

Demerol with Scopolamine (50 mg. of Demerol HCl and 1/300 grain of scopolamine HBr per ml.): Ampuls of 2 ml.; vials of 30 ml. pH is adjusted between 4 and 5 with sodium hydroxide or hydrochloric acid.

**DEMEROL Hydrochloride / for Oral Use:**

Demerol hydrochloride tablets 50 mg.

Demerol hydrochloride tablets 100 mg.

Demerol hydrochloride elixir (50 mg. per 5 ml. teaspoon) — Pleasant banana flavor, nonalcoholic. Especially useful for children.

A.P.C. with Demerol tablets — For potentiated action each tablet contains: 200 mg. (3 grains) of aspirin, 150 mg. (2½ grains) of phenacetin, 30 mg. (½ grain) of caffeine, and 30 mg. (½ grain) of Demerol hydrochloride.

Subject to regulations of the Federal Bureau of Narcotics.

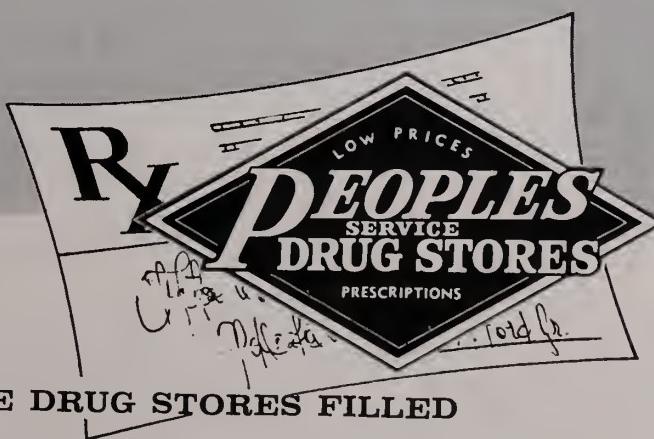
**THE STANDARD DEMEROL®**

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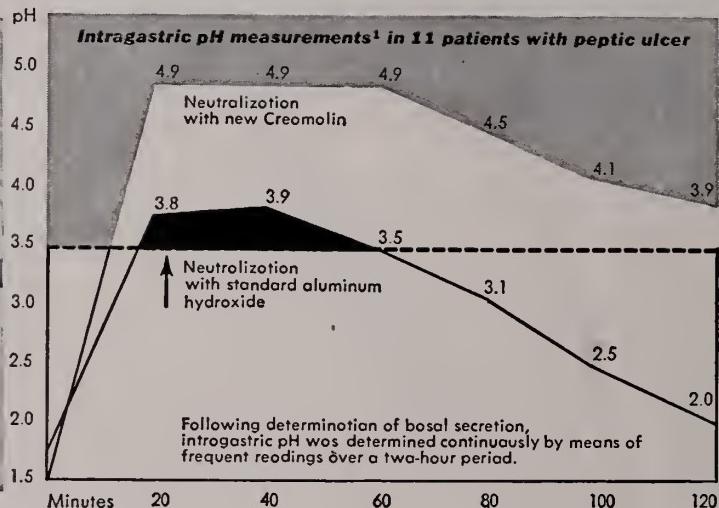
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# Acts as well in people as in test tubes

*in vivo*  
neutralizes  
40 to 50 per cent  
faster—  
twice as long at  
pH 3.5 or above



## New **Creamalin®**

**Antacid Tablets**

*Buffers fast<sup>1-4</sup> for fast relief of pain—  
takes up more acid*

*Heals ulcer fast—action more prolonged *in vivo**

*Has superior action of a liquid, with the  
convenience of a tablet<sup>5</sup>*

Each new Creamalin antacid tablet contains 320 mg. of specially processed, highly reactive dried aluminum hydroxide gel (stabilized with hexitol) with 75 mg. of magnesium hydroxide. New Creamalin tablets are pleasant tasting and smooth, not gritty. They do not cause constipation or electrolyte disturbance.

*Dosage:* Gastric hyperacidity—from 2 to 4 tablets as needed.  
Peptic ulcer or gastritis—from 2 to 4 tablets every two to four hours.

*How Supplied:* Creamalin Tablets, bottles of 50, 100, 200 and 1000.  
Also available: New Creamalin Liquid (1 teaspoon=1 tablet),  
bottles of 8 and 16 fl. oz.

*References:* 1. Schwartz, I. R.: *Current Therap. Res.* 3:29, Feb., 1961.  
2. Beekman, S. M.: *J. Am. Pharm. A.* (Scient. Ed.) 49:191, April, 1960.  
3. Hinkel, E. T., Jr.; Fisher, M. P., and Tainter, M. L.: *J. Am. Pharm. A.* (Scient. Ed.) 48:381, July, 1959. 4. Data in the files of the Department of Medical Research, Winthrop Laboratories. 5. Hinkel, E. T., Jr.; Fisher, M. P., and Tainter, M. L.: *J. Am. Pharm. A.* (Scient. Ed.) 48:384, July, 1959.

**Winthrop**

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## Today's little "limey" needs a half barrel of orange juice

...or, to be exact, a total of 2,106 ounces in his first two years. And how much he'll need during his first twenty years would have to be measured by the truck-load, because the need for the nutrients contained in Florida orange juice continues throughout life.

How our little "limey" or any of your other patients obtain the vitamins and nutrients found in citrus fruits is important to them and to you. There are so many wrong ways, so many substitutes and imitations for the real thing.

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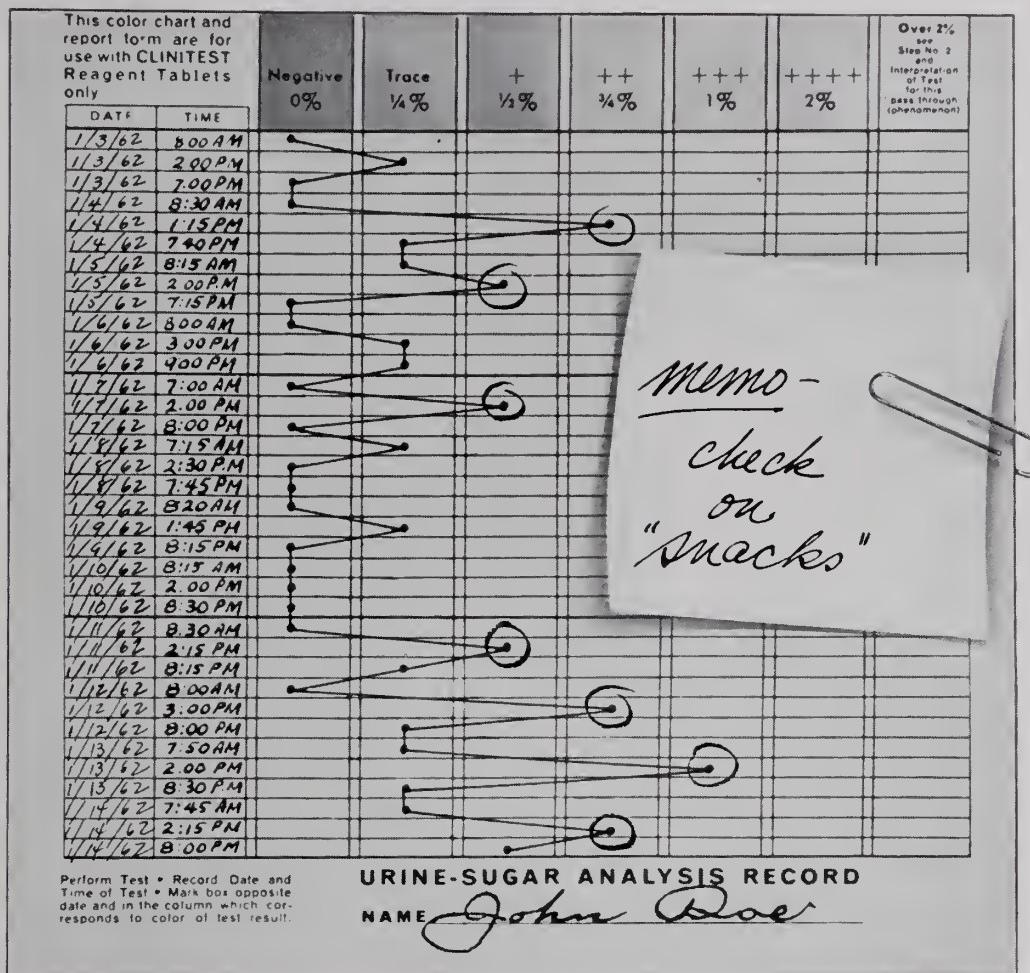
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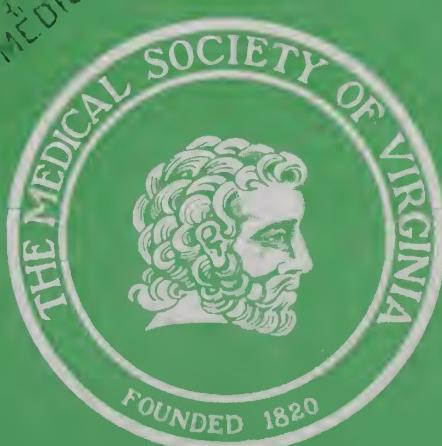
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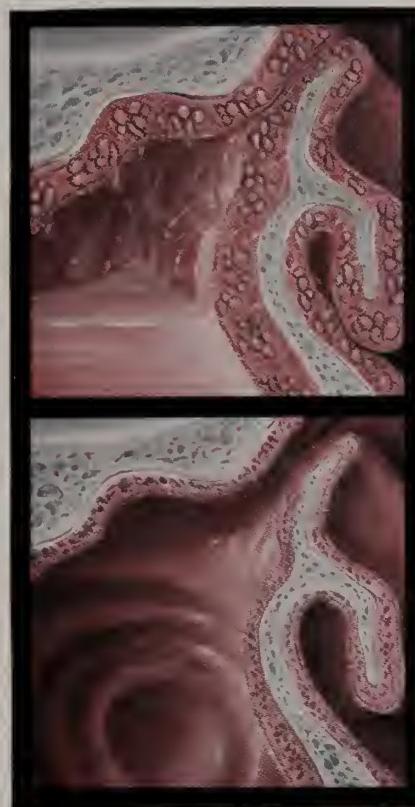
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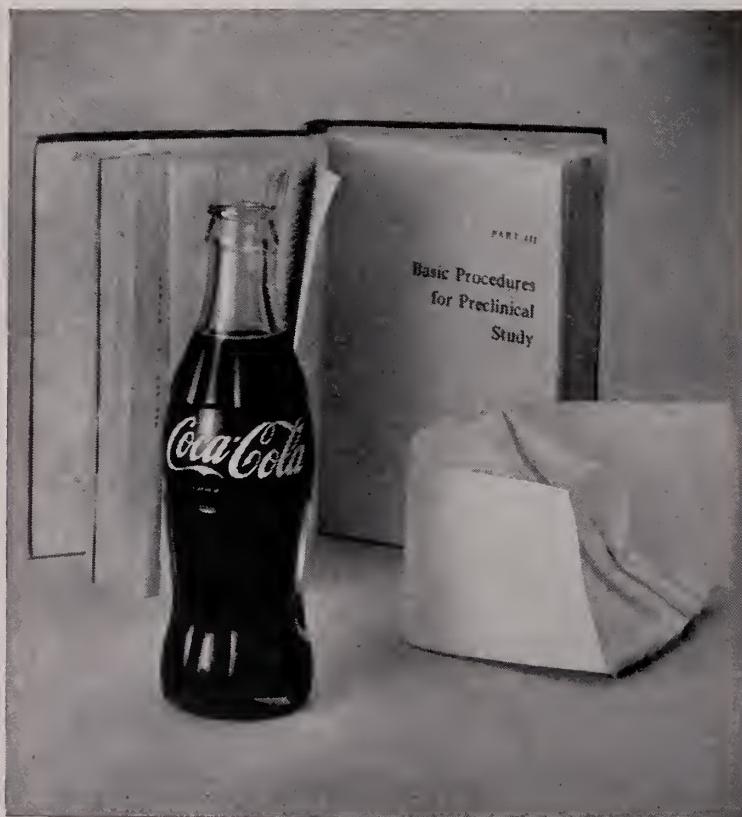
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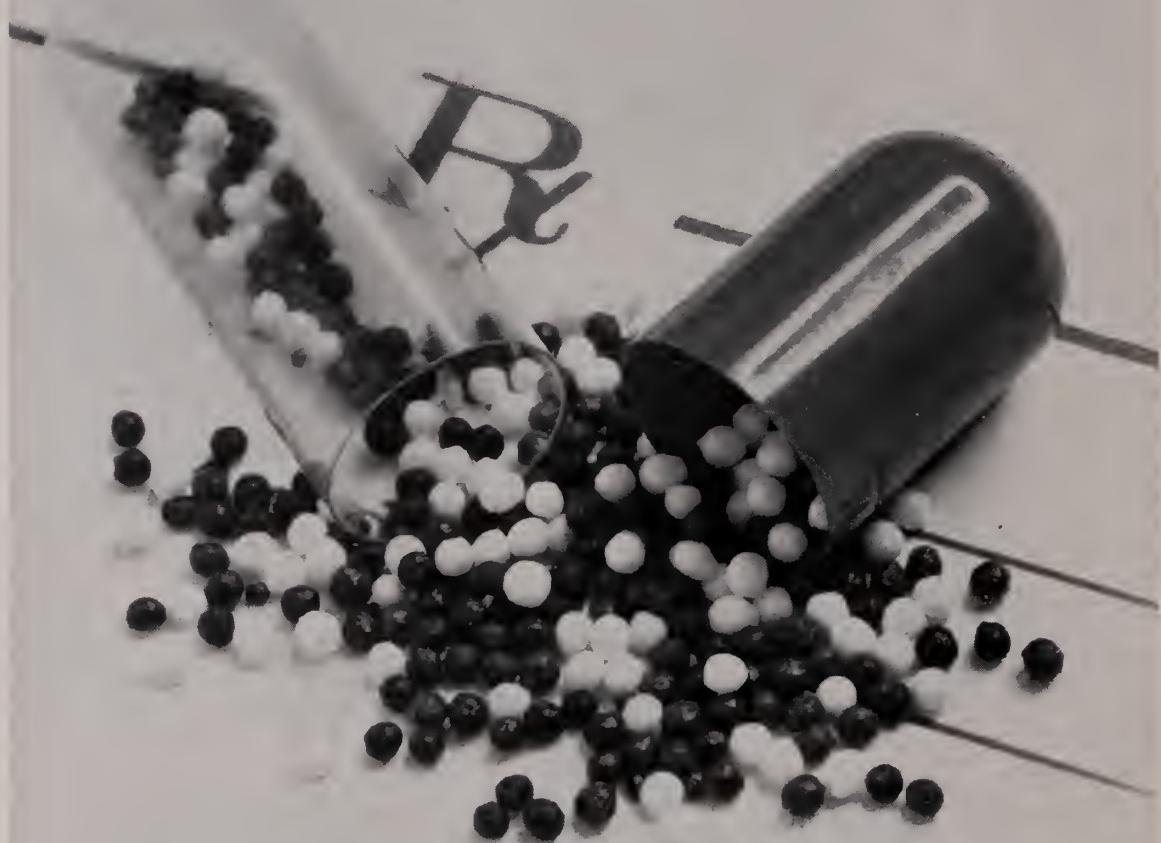
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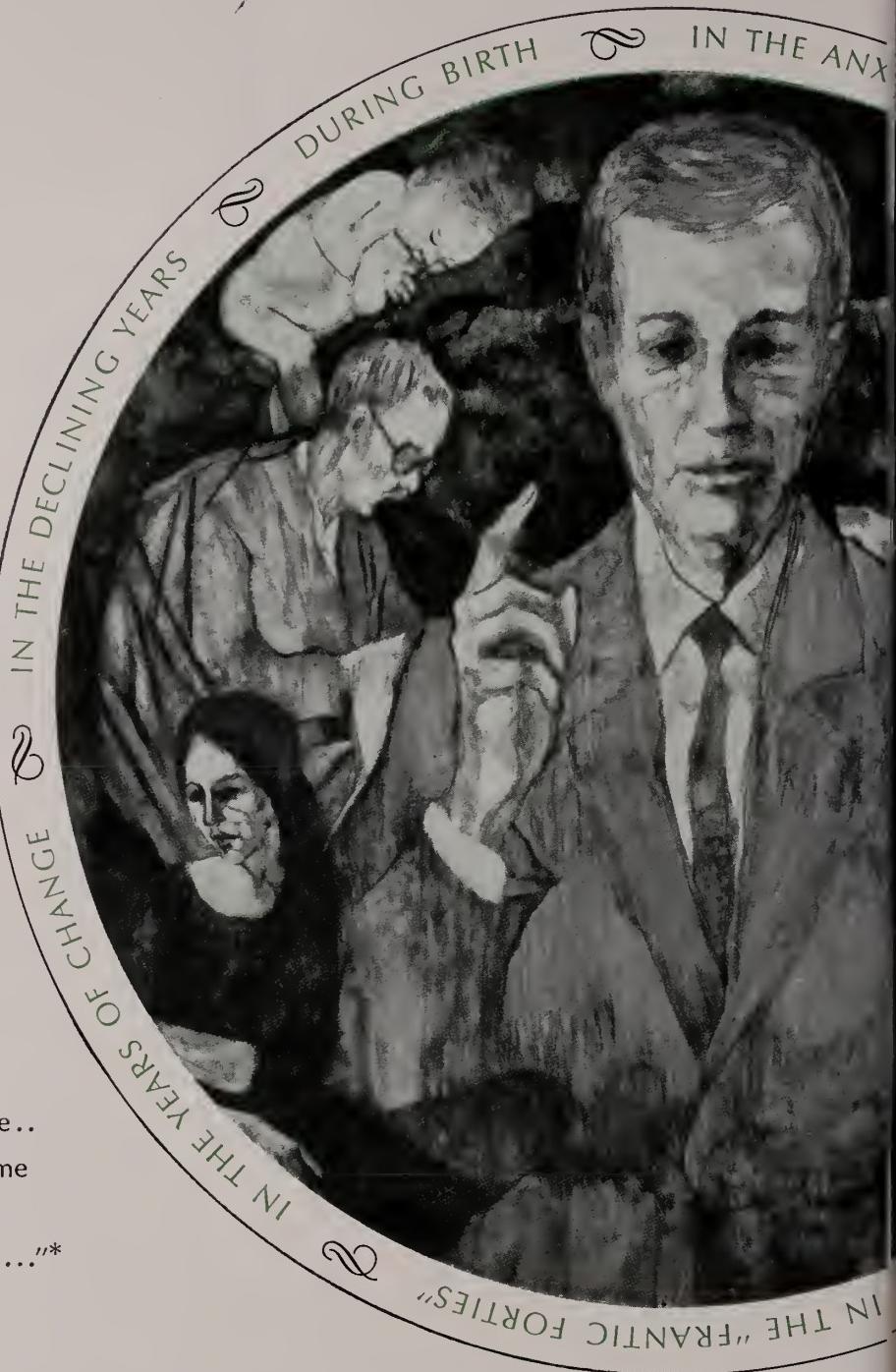


PAGE 643

Supplied: Bottles of 60 and 250.  
Literature and clinical samples  
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PHARMACEUTICALS  
1042 WESTSIDE DRIVE  
GREENSBORO, NORTH CAROLINA



"All the world's a stage...  
And one man in his time  
plays many parts,  
His acts being seven ages..."\*

\**As You Like It*, Act II, Sc. 7



through all seven ages of man

# VISTARIL®

effective anxiety control  
with a wide margin of safety

**in the "frantic forties"—**For many patients in their "frantic forties," the pace never slackens—may even accelerate—while tensions multiply and physical resources dwindle. Out of this seedbed of stresses and anxieties grow much of the alcoholism, psychosomatic illness, and sympathetic overactivity of the middle years.

In each of these areas, VISTARIL is often effective alone or as an adjunct to other therapy. For example, in his series of 67 patients, King<sup>1</sup> found that 62 showed remission of anxiety, tension, nervousness and insomnia, as well as alleviation of symptoms associated with various functional and psychophysiological disturbances. He concludes that VISTARIL is well suited for use in the practice of internal medicine.

In the emergent situation, VISTARIL, administered parenterally, is a valuable aid to the physician in managing patients who escape psychic conflict via alcohol. According to Weiner and Bockman,<sup>2</sup> who obtained beneficial results in 81% of 175 patients studied, hydroxyzine (VISTARIL) may well be considered a tranquilizer of choice in the management of the acutely agitated alcoholic.

1. King, J. C.: Int. Rec. Med. 172:669, 1959. 2. Weiner, L. J., and Bockman, A. A.: Sci. Exhibit, A.M.A., Ann. Meet., New York City, June 26-30, 1961.

## VISTARIL® CAPSULES AND ORAL SUSPENSION

HYDROXYZINE PAMOATE  
**VISTARIL® PARENTERAL SOLUTION**

Science for the world's well-being®  PFIZER LABORATORIES  
Division, Chas. Pfizer & Co., Inc.  
New York 17, New York

SEE "IN BRIEF" ON THE NEXT PAGE.

IN BRIEF

## VISTARIL®

VISTARIL, hydroxyzine pamoate (oral) and hydroxyzine hydrochloride (parenteral solution), is a calming agent unrelated chemically to phenothiazine, reserpine, and meprobamate.

VISTARIL acts rapidly in the symptomatic treatment of a variety of neuroses and other emotional disturbances manifested by anxiety, apprehension, or fear—whether occurring alone or complicating a physical illness. The versatility of VISTARIL in clinical indications is matched by wide patient range and a complete complement of dosage forms. The calming effect of VISTARIL does not usually impair discrimination. No toxicity has been reported with the use of VISTARIL at the recommended dosage, and it has a remarkable record of freedom from adverse reactions.

**INDICATIONS:** VISTARIL is effective in premenstrual tension, the menopausal syndrome, tension headaches, alcoholic agitation, dentistry, and as an adjunct to psychotherapy. It is recommended for the management of anxiety associated with organic disturbances, such as digestive disorders, asthma, and dermatoses. Pediatric behavior problems and the emotional illnesses of senility are also effectively treated with VISTARIL.

**ADMINISTRATION AND DOSAGE:** Dosage varies with the state and response of each patient, rather than with weight, and should be individualized for optimum results. The usual adult oral dose ranges from 25 mg. t.i.d. to 100 mg. q.i.d. Usual children's oral dose: under 6 years, 50 mg. daily in divided doses; over 6 years, 50-100 mg. daily in divided doses.

Parenteral dosage for adult psychiatric and emotional emergencies, including acute alcoholism: I.M.—50-100 mg. Stat., and q.4-h., p.r.n. I.V.—50 mg. Stat., maintain with 25-50 mg. I.V. q.4-h., p.r.n.

**SIDE EFFECTS:** Drowsiness may occur in some patients; if so, it is usually transitory, disappearing within a few days of continued therapy or upon reduction of dosage. Dryness of mouth may be encountered at higher doses.

**PRECAUTIONS:** Drowsiness may occur in some patients. The potentiating action of hydroxyzine should be taken into account when the drug is used in conjunction with central nervous system depressants. Do not exceed 1 cc. per minute I.V. Do not give over 100 mg. per dose I.V. Parenteral therapy is usually for 24-48 hours, except when, in the judgment of the physician, longer-term therapy by this route is desirable.

**SUPPLIED:** VISTARIL Parenteral Solution (hydroxyzine hydrochloride)—10 cc. vials, 25 mg. per cc. and 50 mg. per cc.; 2 cc. ampules, 50 mg. per cc. VISTARIL Capsules (hydroxyzine pamoate)—25, 50, and 100 mg. VISTARIL Oral Suspension (hydroxyzine pamoate)—25 mg. per 5 cc. teaspoonful.

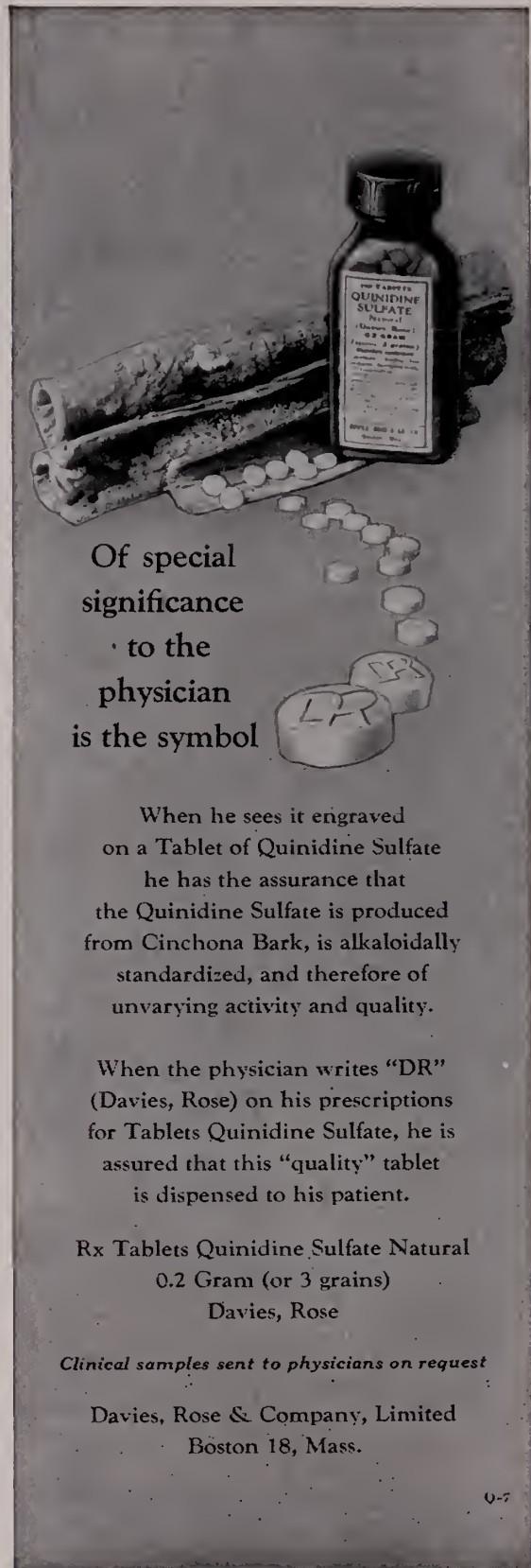
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significance  
to the  
physician  
is the symbol

When he sees it engraved  
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he has the assurance that  
the Quinidine Sulfate is produced  
from Cinchona Bark, is alkaloidally  
standardized, and therefore of  
unvarying activity and quality.

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for Tablets Quinidine Sulfate, he is  
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when occupational allergies strike

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parabromdylamine (brompheniramine) maleate 12 mg.

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reliably relieve the symptoms...seldom affect alertness

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alert, and on the job, for Dimetane works...with a very low incidence of significant side effects. Also available in conventional tablets, 4 mg.; Elixir, 2 mg./5 cc.; Injectable, 10 mg./cc. or 100 mg./cc.

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MAKING TODAY'S MEDICINES WITH INTEGRITY...  
SEEKING TOMORROW'S WITH PERSISTENCE





THIS END UP

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# Can we measure the patient's comfort?

The physician can measure the basal metabolic rate by means of oxygen consumption. But he has no instrument—no objective test—for measuring comfort.

For this, he must depend upon his own powers of observation and the patient's own description of how he feels.

Because these are, admittedly, subjective criteria, the validity of results hinges entirely on the experience and objectivity of the investigators involved.

Such well-qualified clinicians have reported that a new corticosteroid developed in the research laboratories of Upjohn actually raises the level of relief obtainable with this type of therapy.

This difference cannot be "proved." It must be seen. And the only practical way for you to do this is to evaluate this new drug critically in your own practice. Please do, at your first opportunity. We are confident that you will be glad you did.

The new corticosteroid  
from  
Upjohn research

# Alphadrol\*

Each tablet contains Alphadrol (fluprednisolone) 0.75 mg. or 1.5 mg.  
Supplied in bottles of 25 and 100.

The anti-inflammatory activity of Alphadrol is comparable to the best effects obtained in current practice. Results obtained with Alphadrol have been such as to warrant classifying it among the most efficient steroids now available.

More than twice as potent as prednisolone, Alphadrol exhibits no new or bizarre side effects. Salt retention, edema or hypertension, potassium loss, anorexia, muscle weakness or muscle wasting, excessive appetite, abdominal cramping, or increased abdominal girth have not been a problem.

#### Indications and effects

The benefits of Alphadrol (anti-inflammatory, antiallergic, anti-rheumatic, antileukemic, antihemolytic) are indicated in acute rheumatic carditis, rheumatoid arthritis, asthma, hay fever and allergic disorders, dermatoses, blood dyscrasias, and ocular inflammatory disease involving the posterior segment.

#### Precautions and contraindications

Patients on Alphadrol will usually experience dramatic relief without developing such possible steroid side effects as gastrointestinal in-

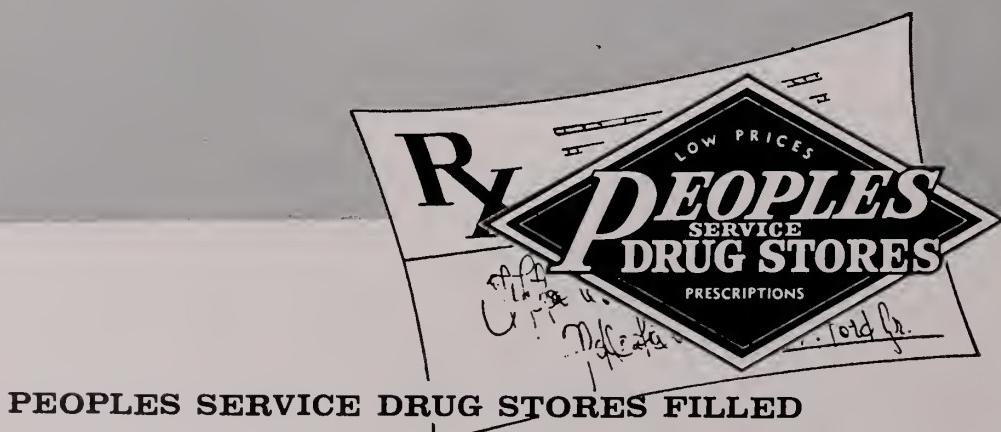
tolerance, weight gain or weight loss, edema, hypertension, acne or emotional imbalance.

As in all corticotherapy, however, there are certain precautions to be observed. The presence of diabetes, osteoporosis, chronic psychotic reactions, predisposition to thrombophlebitis, hypertension, congestive heart failure, renal insufficiency, or active tuberculosis necessitates careful control in the use of steroids. Like all corticosteroids, Alphadrol is contraindicated in patients with arrested tuberculosis, peptic ulcer, acute psychoses, Cushing's syndrome, herpes simplex keratitis, vaccinia, or varicella.

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Peoples Service Drug Stores  
Filled A Prescription  
In 1961!



4,424,474 PRESCRIPTIONS IN 1961

**T**extbook after textbook, article after article and experience in practice after practice consistently have demonstrated the capacity of Demerol to produce satisfactory analgesia without weakening the intensity of uterine contractions. In fact, many observers have reported an apparent shortening of labor, particularly in the primipara.

Because it is well tolerated by both the mother and the newborn child, Demerol is generally considered one of the safest analgesics for use in obstetric practice.

In addition to satisfactory analgesia, a moderate sedative effect is obtained with large doses, and sleep is frequently induced between pains.

In 13,000 deliveries reported by 158 physicians, "Demerol was unquestionably the narcotic of choice during labor."

(Questionnaire, The Maternal and Child Welfare Committee, South Dakota State M. A., 1958)<sup>1</sup>

"Demerol is our drug of choice for analgesia during labor."

(Posner, Fielding and Posner, Harlem Hospital, New York City)<sup>2</sup>

Demerol in combination with scopolamine "... offers the best means of securing analgesia and amnesia in labor with the least risk to the mother and child. ... Often one is amazed at the manner in which the cervix melts away under this form of medication."

(Beck and Rosenthal, State University of New York)<sup>3</sup>



**DEMEROL®**  
THE ANALGESIC OF CHOICE  
IN OBSTETRIC PRACTICE

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*For a Smooth Delivery...*

# DEMEROL

BRAND OF MEPERIDINE HYDROCHLORIDE

THE ANALGESIC OF CHOICE IN OBSTETRIC PRACTICE

## DEPENDABLE ANALGESIA AND AMNESIA

"When combined with scopolamine, it [Demerol] can produce satisfactory amnesia-analgesia in over 90% of the mothers during labour."

In one of the most commonly used technics, an initial dose of 100 mg. of Demerol and 1/150 grain of scopolamine is given intramuscularly when labor is established. Subsequently, 100 mg. of Demerol are given every four hours and 1/200 grain of scopolamine every three hours. "Within 15 or 20 minutes the pain is relieved and neither the frequency nor the intensity of the uterine contractions are diminished."

(Beck and Rosenthal)

Demerol is "...an analgesic drug which relieves pain about as well as does morphine, and it has in addition an antispasmodic action which makes it a good preparation for use during labor.... It may be given alone but its effect is enhanced when it is used in combination with scopolamine, and the resultant amnesic effect is excellent."

(Titus, Pittsburgh)

**SIDE EFFECTS AND CONTRAINDICATIONS:** Demerol hydrochloride is generally well tolerated and nontoxic in therapeutic doses. Side effects occur more frequently in ambulatory patients (who should therefore be specially cautioned) than in those confined to bed. Dizziness is the most common reaction. Nausea or vomiting occurs less frequently than after administration of morphine. Flushing of the face, sweating and dryness of the mouth are sometimes noted. More severe reactions are characterized by great weakness, syncope, profuse perspiration, marked dizziness, and nausea and vomiting. They usually can be prevented if the patient lies down promptly at the onset of side effects. Tolerance to side effects usually develops quickly if medication is continued in small doses (25 mg.). In contrast to morphine, respiratory depression occurs infrequently.

However, in patients with lesions that cause increased intracranial pressure, respiratory depression has been noted; therefore, the drug is considered to be contraindicated in such persons.

When Demerol with Scopolamine is used, idiosyncrasy to scopolamine may be encountered occasionally, producing the paradoxical effect of excitement, restlessness, hallucinations and delirium instead of sedation and amnesia. In addition, edema of the uvula, glottis and lips may be encountered occasionally in extremely hypersensitive patients.

Nalorphine (Nalline®) or levallorphan (Lorfan®) are considered to be specific antidotes against respiratory depression which may result from overdosage or unusual sensitivity to narcotics including Demerol.

1. Ranney, Brooks *South Dakota J. Med. & Pharm.* 11:479, Dec., 1958.
2. Posner, L. B.; Fielding, W. L., and Posner, A. C.: *Obst. & Gynec.* 2:81, July, 1953.
3. Beck, A. C., and Rosenthal, A. H.: *Obstetrical Practice*, ed. 7, Baltimore, The Williams & Wilkins Company, 1958, pp. 1029, 1030.
4. Hershenson, B. B., and Reid, D. E.: *Bull. Narcotics* 8:36, July-Sept., 1956.
5. Titus, Paul *The Management of Obstetric Difficulties*, ed. 5, St. Louis, C. V. Mosby Co., 1955, p. 617.

PRINTED IN U. S. A. REVISED DECEMBER 1959 (10134)

## DEMEROL Hydrochloride Solutions | for Parenteral Use:

50 mg. per ml.: Ampuls of 0.5, 1, 1.5 and 2 ml. (25 to 100 mg.); vials of 10 and 30 ml.; disposable syringes of 1 ml.

75 mg. per ml.: Disposable syringes of 1 ml.

100 mg. per ml.: Ampuls of 1 ml.; vials of 20 ml.; disposable syringes of 1 ml.

pH of Demerol 5% and 10% solutions in ampuls and vials is adjusted between 4.5 and 6.0 with sodium hydroxide or hydrochloric acid. Multiple dose vials of Demerol solution also contain metacresol 0.1 per cent as preservative.

Demerol with Scopolamine (50 mg. of Demerol HCl and 1/300 grain of scopolamine HBr per ml.): Ampuls of 2 ml.; vials of 30 ml. pH is adjusted between 4 and 5 with sodium hydroxide or hydrochloric acid.

## DEMEROL Hydrochloride | for Oral Use:

Demerol hydrochloride tablets 50 mg.

Demerol hydrochloride tablets 100 mg.

Demerol hydrochloride elixir (50 mg. per 5 ml. teaspoon) — Pleasant banana flavor, nonalcoholic. Especially useful for children.

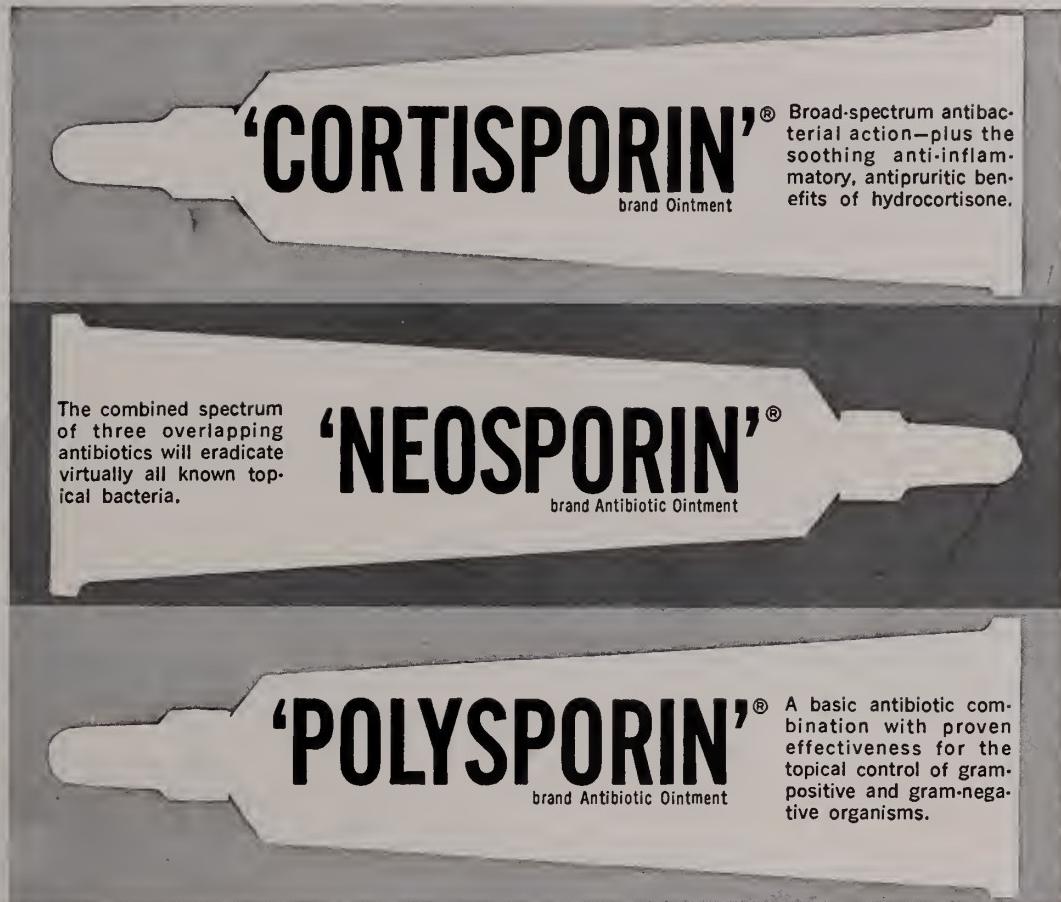
A.P.C. with Demerol tablets — For potentiated action each tablet contains: 200 mg. (3 grains) of aspirin, 150 mg. (2½ grains) of phenacetin, 30 mg. (½ grain) of caffeine, and 30 mg. (½ grain) of Demerol hydrochloride.

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THE STANDARD **DEMEROL®**

*for Controlled, Safe Analgesia in Obstetrics*

**'B. W. & Co.' 'Sporin' Ointments  
rarely sensitize . . .  
give decisive bactericidal action  
for most every topical indication**



Contents per Gm.	'Polysporin'®	'Neosporin'®	'Cortisporin'®
'Aerosporin'® brand Polymyxin B Sulfate	10,000 Units	5,000 Units	5,000 Units
Zinc Bacitracin	500 Units	400 Units	400 Units
Neomycin Sulfate	—	5 mg.	5 mg.
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Supplied:	Tubes of 1 oz., ½ oz. and ¼ oz. (with ophthalmic tip)	Tubes of 1 oz., ½ oz. and ¼ oz. (with ophthalmic tip)	Tubes of ½ oz. and ¼ oz. (with ophthalmic tip)



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But now we wonder... because so many of you have said to us lately, either orally or in writing, "Why are you telling us this? Our patients are the ones who really need to hear this story."

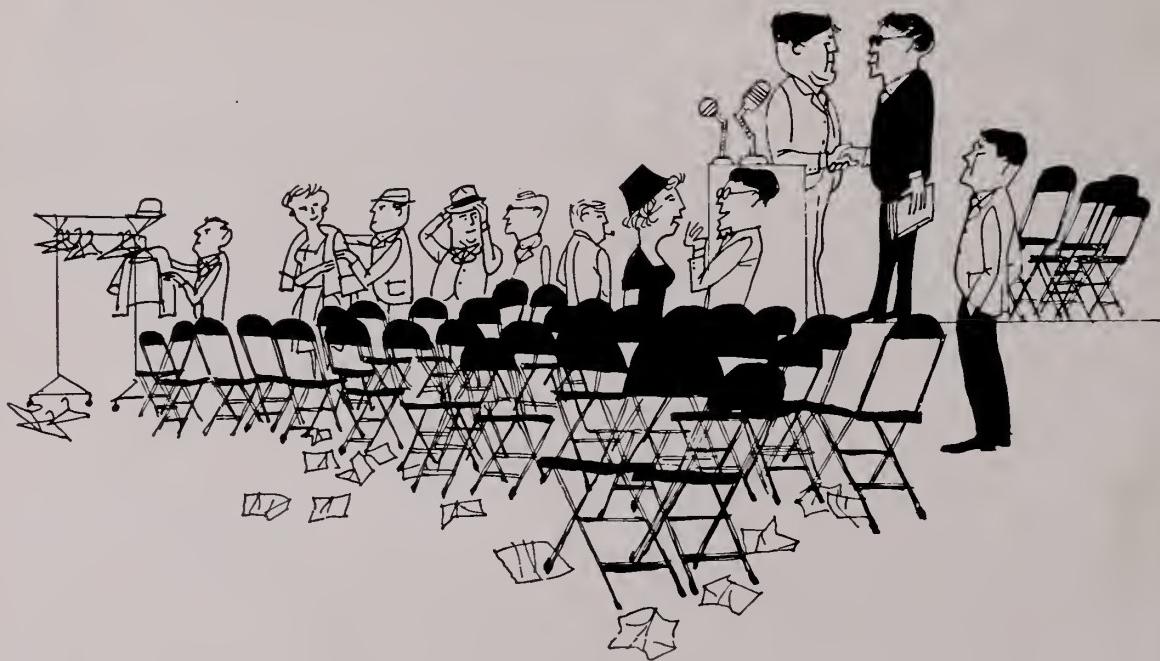
Thank you for pointing out this need; and for the aid some of you have already given us. We think we can now be of still more help in

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gain energy for today's labor of planting.

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In Blue Shield, the doctor today has a sure way to meet radical challenges to the voluntary financing of medical care—and to voluntary medicine itself. Only the foresight and energetic action of all doctors can expand the effectiveness of Blue Shield. Declared one doctor: "The future of medicine and Blue Shield may well rest upon the wisdom of our decisions and our willingness to act. Let the record show that we stood fast to preserve our voluntary health care for future generations."

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## How to help your patient stick to a high protein diet

The secret ingredient in a successful diet is acceptance. And a diet that offers as many appetizing foods as this is sure to win the approval and continued interest of your patient!

A fluffy omelette filled with frankfurters cut into thin slices is a delicious source of protein,

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Hot weather suppers call for mixed green salad topped with meat and cheese slices . . . followed by a bowl piled high with chilled fruit of the season.

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*A glass of beer can add zest to a patient's diet*

Protein, 0.8 gm;  
Calories 104/8 oz. glass  
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Nutritional supplementation is basic to postoperative care.

Therapeutic allowances of B and C vitamins help meet increased metabolic requirements and compensate for stress depletion. STRESSCAPS can set the patient on a more favorable course and contribute to full recovery.

Packaged in decorative "reminder" jars of 30 and 100.

#### **Each capsule contains:**

Vitamin B <sub>1</sub> (Thiamine Mononitrate)	10 mg.
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Niacinamide	100 mg.
Vitamin C (Ascorbic Acid)	300 mg.
Vitamin B <sub>6</sub> (Pyridoxine HCl)	2 mg.
Vitamin B <sub>12</sub> Crystalline	4 mcgm.
Calcium Pantothenate	20 mg.

Recommended intake: Adults, 1 capsule daily, or as directed by physician, for the treatment of vitamin deficiencies.

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# **STRESSCAPS®**

Stress Formula Vitamins Lederle



# excessive uterine bleeding\*

“ significant improvement ... ”<sup>1</sup>

## duo-CVP® (double-strength CVP)

In patients in whom there was "flooding" (associated with menorrhagia for which no organic cause could be isolated), non-hormonal therapy with duo-C.V.P. achieved "excellent" results as assessed by easy control of bleeding, improved sense of well-being, and ability to maintain normal activities. "In no case has there been any instance of side effects."<sup>1</sup>

The clinician attributes the anti-hemorrhagic effects of duo-C.V.P. to its apparent ability to restore normal small vessel structural integrity and function.

duo-C.V.P. and C.V.P.<sup>†</sup> have also been reported of value in the treatment of capillary bleeding associated with other gynecologic conditions such as threatened and habitual abortion, post-partum bleeding and functional menometrorrhagia.<sup>2-4</sup>

Each duo-C.V.P. capsule provides:

CITRUS BIOFLAVONOID COMPOUND	200 mg.
ASCORBIC ACID (VITAMIN C)	200 mg.

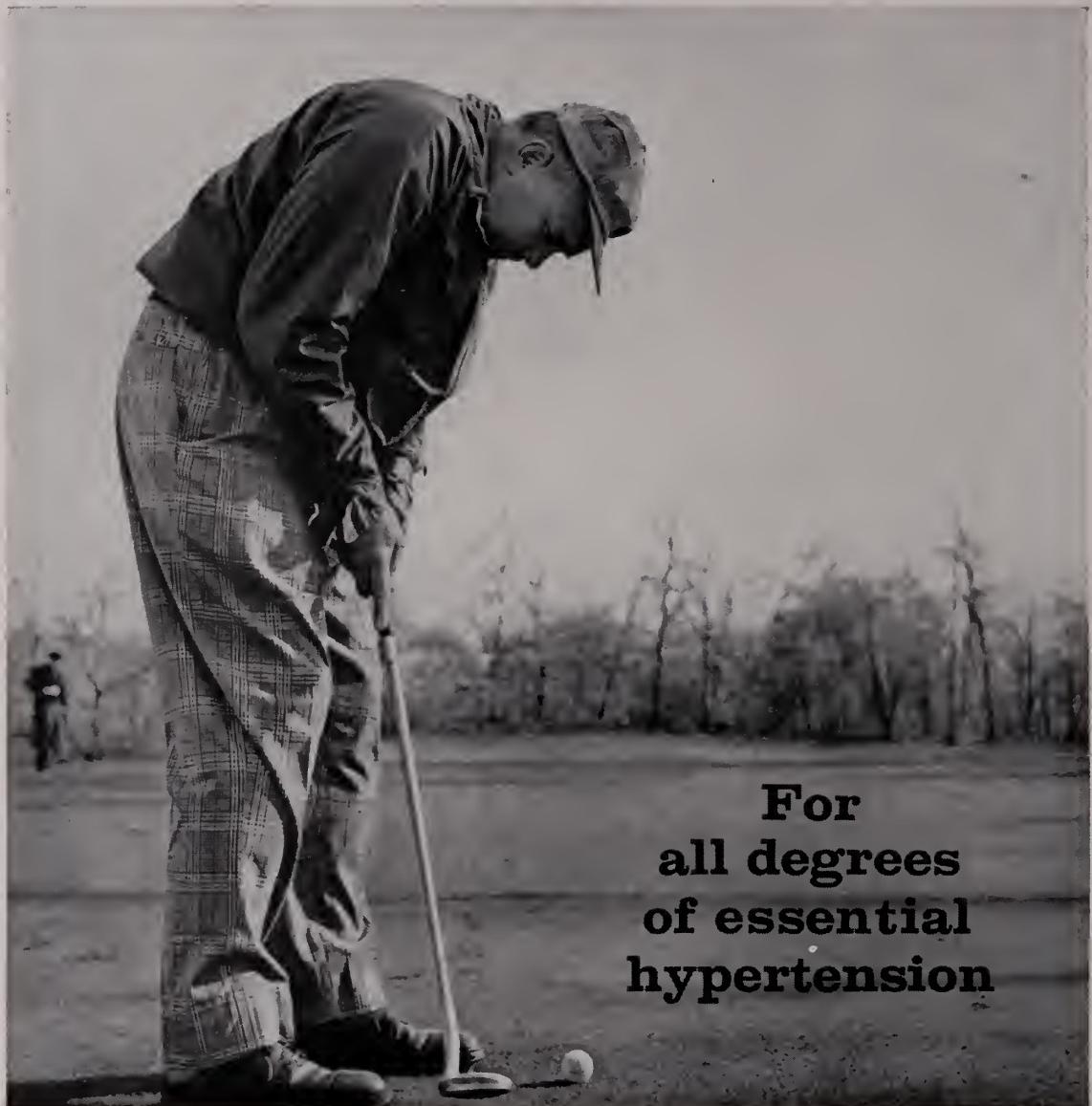
Bottles of 50, 100, 500 and 1000 capsules.

<sup>†</sup>C.V.P. provides in each capsule 100 mg. of an exclusive citrus bioflavonoid compound and 100 mg. of ascorbic acid. Bottles of 100, 500 and 1000 capsules.

references: 1. Prueter, G. W.: Applied Therapeutics 3:351, 1961. 2. Taylor, F. A.: West J. Surg., Obstet. & Gynec. 64:280, 1956. 3. Ainslie, W. H.: Obstet. & Gynec. 13:185, 1959. 4. Pearse, H. A., and Trisler, J. D.: Clin. Med. 4:1081, 1957.

\*menorrhagia

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For  
all degrees  
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"relief of symptoms is striking with Rautrax-N"†

Rautrax-N decreases blood pressure for almost all patients with mild, moderate or severe essential hypertension. Rautrax-N also offers a new sense of relaxation and well-being in hypertension complicated by anxiety and tension. And in essential hypertension with edema and/or congestive heart failure, Rautrax-N achieves diuresis of sodium and chloride with minimal effects on potassium and other electrolytes.

Rautrax-N combines Raudixin (antihypertensive-tranquilizer) with Naturetin ċ K (anti-hypertensive-diuretic) for greater antihyper-

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# Rautrax-N\*

Squibb Standardized Rauwolfia Serpentina Whole Root (Raudixin)  
and Bendroflumethiazide (\*Naturetin) with Potassium Chloride

tensive effect and greater effectiveness in relief of hypertensive symptoms than produced by either component alone. Rautrax-N is also flexible (may be prescribed in place of Raudixin or Naturetin ċ K) and economical (only 1 or 2 tablets for maintenance in most patients).

*Supply:* Rautrax-N — capsule-shaped tablets providing 50 mg. Raudixin, 4 mg. Naturetin and 400 mg. potassium chloride. Rautrax-N Modified — capsule-shaped tablets providing 50 mg. Raudixin, 2 mg. Naturetin and 400 mg. potassium chloride.

†Hutchison J. C.: Current Therap. Res. 2:487 (Oct.) 1960.



Squibb Quality —  
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\*RAUDIXIN®, \*RAUTRAX®, AND \*NATURETIN® ARE SQUIBB TRADEMARKS.

VIRGINIA MEDICAL MONTHLY



## In acne—24-hour-a-day skin care with antibacterial pHisoHex®

(contains 3% hexachlorophene)

In acne, pHisoHex, antiseptic detergent, provides continuous antibacterial action against the infection factor. With exclusive, frequent use, pHisoHex builds up an effective antibacterial film on the skin that resists rinsing—lasts from wash to wash. pHisoHex augments any other therapy of acne.

When pHisoHex was used for washing by 42 patients with acne, "the results were uniformly encouraging...."<sup>1</sup> "No patient failed to improve."<sup>1</sup>

pHisoHex cleans the skin of acne patients better than soap because it is forty per cent more surface active. It is a powerful emulsifier of oil, an action particularly beneficial in acne. Moreover, it cleans the orifices of the sebaceous glands, sweat glands and hair follicles more rapidly and more thoroughly than soap. pHisoHex lacks the

potentially harmful qualities of soap. It is non-alkaline, nonirritating and hypoallergenic.<sup>2</sup>

For acne, prescribe pHisoHex—and get improved results.

pHisoAc® Cream dries, peels and masks lesions. Use it with pHisoHex washings to help prevent comedones, pustules and scarring. Contains colloidal sulfur 6 per cent, resorcinol 1.5 per cent and hexachlorophene 0.3 per cent.

pHisoHex is available in unbreakable squeeze bottles of 5 oz. and 1 pint—and in combination package with pHisoAc Cream.

1. Hodges, F. T.: *CP* 14:86, Nov., 1956.
2. Guild, B. T.: *Arch. Dermat.* 51:391, June, 1945.

*Winthrop* LABORATORIES  
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(166SM)

# Relieves Anxiety and Anxious Depression



The outstanding effectiveness and safety with which Miltown relieves anxiety and anxious depression—the type of depression in which either tension or nervousness or insomnia is a prominent symptom — has been clinically authenticated time and again during the past six years. This, undoubtedly, is one reason why physicians still prescribe meprobamate more often than any other tranquilizer in the world.

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in over 750  
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- 1 Acts dependably — without causing ataxia or altering sexual function
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meprobamate (Wallace)

**Usual dosage:** One or two 400 mg. tablets t.i.d.  
**Supplied:** 400 mg. scored tablets, 200 mg. sugar-coated tablets; bottles of 50. Also as MEPROTAB®—400 mg. unmarked, coated tablets; and in sustained-release capsules as MEPROSPAN®-400 and MEPROSPAN®-200 (containing respectively 400 mg. and 200 mg. meprobamate).



WALLACE LABORATORIES / Cranbury, N.J.

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# Naqua<sup>®</sup>

brand of trichlormethiazide

## to help them live with their hypertension

Good start on the  
day's work (sleep  
is restful,  
morning  
headache gone)



Golf today,  
fishing tomorrow  
(retired but not  
easily tired)



Housework in  
a.m., shopping in  
p.m. (B.P. down,  
dizzy spells  
relieved)



Gardening is  
enjoyable again  
(edema gone,  
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often the only therapy  
needed to control blood  
pressure and relieve  
symptoms in mild or  
moderate cases\*

NAQUA potentiates other  
antihypertensives when used  
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Packaging: NAQUA Tablets, 2 or 4 mg.,  
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\*Schaefer, L. E.: Clin. Med. 8:1343, 1961.

S-963

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(paramethasone acetate, Lilly)



Haldrone is highly effective in suppressing the manifestations of HAY FEVER and pollen allergies, even when administered in low dosage. (Haldrone is approximately nine times as potent as hydrocortisone in ACTH suppression tests in man.<sup>1</sup>) With average dosage, only minimal changes occur in regard to sodium retention or potassium excretion. Haldrone is comparatively economical for your patients, too.

*Lilly*

Suggested daily dosage in hay fever:  
Initial suppressive dose . . . 4.8 mg.  
Maintenance dose . . . . 2.4 mg.

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# *The Virginia* MEDICAL MONTHLY

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## Guest Editorial . . .

### Are You Practicing Illegally?

THE CODE OF VIRGINIA—Medical Practices Act—reads as follows:

*Section 54-315.1—Annual Renewal of Certificates*—Every certificate to practice medicine, homeopathy, osteopathy, chiropractic, naturopathy, chiropody or physical therapy granted under the provisions of this chapter *shall expire* on the thirtieth day of June of each year, but shall be renewed annually by the State Board of Medical Examiners upon application of the holder thereof as herein provided. On or before June first of each year the Secretary of the Board shall mail to each certificate holder at his last known address an application for renewal of certificate in such form as the Board may determine, which application shall have had thereon instructions as to how it shall be prepared, signed and returned. The person holding the certificate shall furnish the information indicated on the application and sign and return the application to the Board with a renewal fee of \$3.00 on or before June thirtieth of each year. Upon receipt of the application and the required fee the Secretary of the Board shall issue to the applicant a certificate of renewal for the period beginning July first of the current year and ending June thirtieth of the following year. No renewal certificate shall be required for any part of the renewal period in which the original certificate is granted. Failure of the certificate holder to receive the application form from the Secretary shall not excuse him from the requirements for renewal herein contained. Such certificate of renewal shall be conspicuously displayed in the office of the holder thereof and shall authorize such holder to practice the school or branch of the healing arts designated thereon for the period indicated on the certificate.

*Section 54-315.4—Penalty for Violation*—Any person who shall violate any of the provisions of this article shall be punished by a fine of not less than twenty-five nor more than fifty dollars for each offense.

The office of the Board of Medical Examiners sends out notices every year in mid-April to all *known* licensees who are practicing in Virginia. Many of our notices are returned to us for one of several reasons:

Doctors fail to notify us of change of address. This is an obligation which becomes the duty of a physician when he accepts his license certificate.

This office should be notified when a physician retires or moves out of State.

This office should be notified by the estate of a deceased physician.

Our greatest difficulty lies in the fact that if a doctor pays no attention to the notice we have assumed that he is no longer in practice and no notice is sent to him in any future years unless we can pick up his name from one of several available lists of active practitioners. His name is not dropped, however, until we have sent a second and a third notice. In spite of these notices and every possible follow-up from the office of your Board, there are many doctors who are in active practice who have not carried out the annual registration. Please note that the Code of Virginia says plainly that such doctors have allowed their licenses to "expire on the thirtieth day of June of each year".

The fact that doctors have failed to comply with the law ("failure of the certificate holder to receive the application form from the Secretary shall not excuse him") is a cause of greatest concern to your Board. We feel that we are your servants, charged primarily with the duty of helping you and then with the duty of enforcing the Code if you refuse to be helped. Surely any doctor, every doctor must realize how precarious his position can and may become if he continues in practice after his license has *expired*. Think, if you will, of all the implications of such a situation. Let your mind dwell seriously on this and help your Board of Medical Examiners in their desire to operate efficiently.

Notices for registration and application forms will go out from the office of the Board of Medical Examiners in mid-April to May first. As you read this plea begin to watch for your notice and warn your secretary *not to let it get misplaced*. Should you fail to receive your notice by May fifteenth you should promptly contact the Board office. Make it your business to see to it that you get a registration application prior to July 1, 1962. When you get it fill it out and return it with fee to this office immediately. Upon receipt of this application card in this office a registration certificate will be mailed to you as soon as possible. It is your responsibility to see that you receive this certificate before July 1, 1962. When you get it post it on your wall (as instructed in the Code) just as you do your narcotic stamp and your State license to practice medicine.

R. M. Cox, M.D., *Secretary-Treasurer*  
Virginia Board of Medical Examiners

# The Anatomy of Varicose Veins as Related to their Surgical Management

EUGENE L. LOWENBERG, M.D.  
Norfolk, Virginia

*A knowledge of the anatomy of veins of the leg and their variations should be familiar to the surgeon who treats varicosities.*

SAPHENOUS VEIN SURGERY is better planned and more thoroughly executed when the operator has a knowledge of the course and termination of the veins to be removed. Such knowledge makes possible a written description of the veins that are varicosed, a description that can be read with profit by the operator just prior to the surgery. Such knowledge enables the examiner to find by palpation veins not visibly varicosed. The pre-operative marking of the varicosities becomes more meaningful as veins of known distribution are traced. Perforator vein areas are marked with information as to their usual sites in mind. The surgery is transformed from a monotonous removal of nondescript varicosities to the interesting game of dissecting and stripping veins of familiar name and course. Finally, anatomic knowledge is as important in this surgery as it is in all surgery if operative morbidity is to be held to a minimum.

This paper is based on several thousand saphenous ligation and stripping operations completed by the author. A number of the illustrations are redrawn from Dodd and Cockett's book, "The Pathology and Surgery of the Veins of the Lower Limbs."<sup>1</sup>

Presented before the Virginia Surgical Society, Williamsburg, May 20, 1961.

The varicose state involves four categories of surface veins:

- (1) The main trunks—the long and short saphenous veins.
- (2) The tributaries.
- (3) The cross-communicators.
- (4) The perforators.

## Category I. A. The Long Saphenous Vein

This vein has three important variations that occur chiefly in the thigh. (Fig. 1). These are:

- (1) Duplication.<sup>1</sup>
- (2) Parallelism.<sup>2</sup>
- (3) A relatively small long saphenous vein and a large tributary mimicking the long saphenous vein. (Accessory saphenous).

## Surgical Considerations

Duplication occurs in the thigh where the saphenous vein is deeply situated. It is thus rarely recognized pre-operatively. At surgery, the intra-luminal stripper passes up one trunk only. The unwary surgeon may well leave behind a saphenous trunk larger than the one he has removed.

Parallelism presents a similar hazard. A large tortuous superficial varix ascends the thigh paralleling and overlying the long saphenous vein. As the internal stripper usually ascends the long saphenous vein, a more superficial counterpart may well be left in situ.

A saphenous tributary may have a high termination, and when large, it may mimic the long saphenous vein. In spite of its size, this so-called accessory saphenous vein is

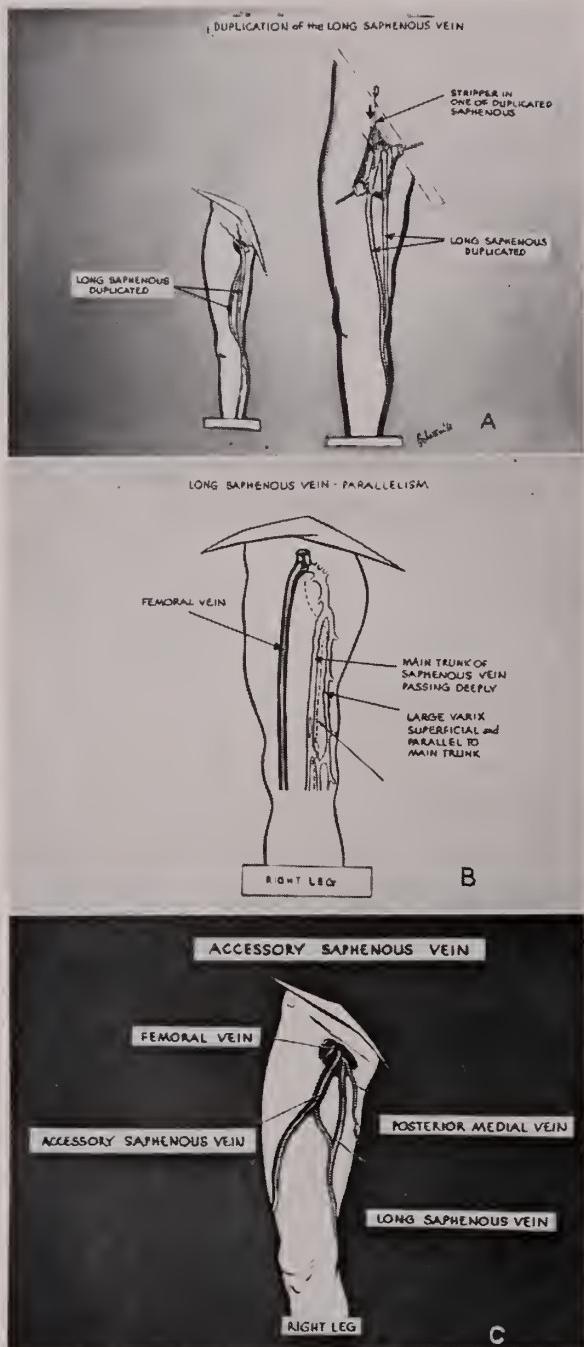


Fig. I. Variations of the long saphenous vein.

- (a) Duplication. In the larger drawing, the great saphenous vein can be seen to divide at the knee, and to enter the sapheno-femoral junction as two large separate trunks. In the smaller drawing, the main trunk of the great saphenous vein is seen to separate at the knee and then rejoin in the upper third of the thigh.
- (b) A large varicose trunk ascends the leg parallel to the main great saphenous trunk, the latter remains under Camper's fascia, and is not clinically visible.
- (c) The anterior lateral tributary of the great saphenous vein is larger than the main trunk of the great saphenous vein itself, and is readily mistaken for the latter.

Fig. A. Redrawn from Dodd & Cockett "Pathology and Surgery of the Veins of the Lower Limb."

usually thin-walled and blue, which distinguishes it from the long saphenous vein, which is thick-walled and white.

The long saphenous nerve accompanies the saphenous vein at the ankle and up the leg to the knee level. It passes deeply in the thigh. Preferably left in situ, its accidental removal is not followed by significant symptoms.

### Category I. B. The Short Saphenous Vein

#### *Variations (Fig. II)*

High termination.

Double termination.

Low termination.

Variations of the short saphenous vein are related chiefly to its termination. This vein takes a normal course, and enters the popliteal vein behind the knee in only 42% of cases.<sup>3</sup>

In high termination, the short saphenous vein may enter the popliteal vein well above the transverse crease of the knee. It may terminate in the deep veins of the upper thigh, or even in the upper segment of the long saphenous vein. In low termination, the short saphenous vein may enter the long saphenous just below the knee or into the deep muscular veins of the mid calf. In double termination, the short saphenous vein divides in the popliteal space into approximately equal branches, one of which joins the popliteal vein, and the other of which ascends under the deep fascia to the center of the thigh, where it becomes subcutaneous again, and turns inward and upward to join the long saphenous vein.

The short saphenous vein enters an aponeurotic compartment of the deep fascia in the mid calf. It remains deep from this level to its junction with the popliteal vein in the popliteal space.

The sural nerve is in intimate relation with the short saphenous vein at the ankle level and in the popliteal space.

#### *Surgical Considerations*

Ligation and section of the short saphe-

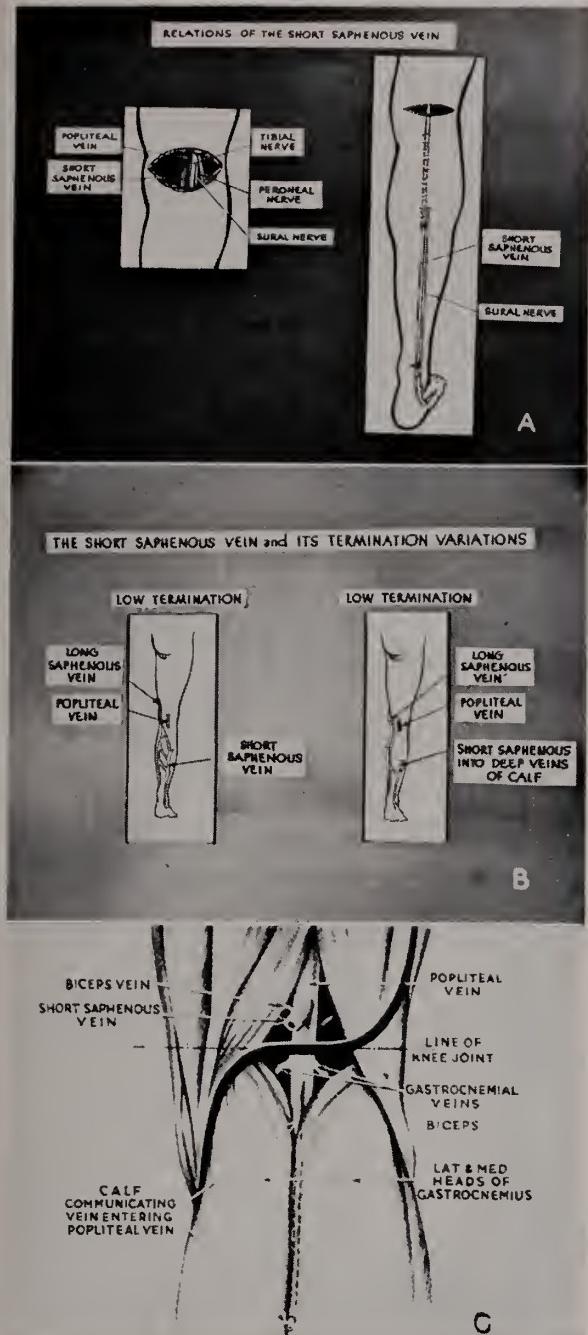


Fig. II. Anatomic relations of the short saphenous vein.

- Note the close association of the sural nerve. The short saphenous vein lies under the deep fascia in the upper third of the leg. Transverse incisions used for the short saphenous ligation and stripping are shown. During the superficial dissection in the popliteal area, the upper end of the sural nerve may be encountered; in the deep dissection, the tibial and peroneal nerves must be identified.
- On the right, the short saphenous is shown entering a perforator vein in the mid calf. On the left, the short saphenous enters the long saphenous instead of the popliteal vein.
- Deep relations of the sapheno-popliteal junction. The gastrocnemius veins into which pseudo-short saphenous varicosities empty are seen. See text. The S

shaped incision is used when the sapheno-popliteal junction needs to be widely exposed as for the surgery of pseudo-short saphenous varicosities. The long course which the calf perforator vein takes before entering the deep veins is illustrated.

Fig. B. Redrawn from Dodd & Cockett "Pathology and Surgery of the Veins of the Lower Limb."

Fig. C. From Dodd, Harrell. "Varicosities of the External and Pseudo-Varicosity of the Short External Saphenous Vein."

nous vein through an incision in the popliteal space may leave a saphenous stump several inches long in cases of high termination. Within a few years, this stump becomes quite a large and troublesome varix. It is particularly troublesome because it cannot be treated safely by sclerotherapy due to its close connection with the deep veins. The short saphenous vein should be dissected to its termination under direct vision. Otherwise, an external stripper should be slipped over the upper saphenous stump, and the vein ligated through an additional incision made in the thigh at the highest point reached by the stripper. With very high termination, the short saphenous may have to be stripped or dissected out well up on the posterior thigh.

Should the intraluminal stripper, passed upwards, extend beyond the popliteal space, it may have entered the deep veins of the mid thigh or may have passed into the long saphenous vein in the thigh. Should the intraluminal stripper fail to reach the popliteal space, it may have entered the deep veins through a perforator in the calf region, or turned mesially and entered the long saphenous below the knee, or may simply have become arrested in the vein as the vein enters the fascial compartment of the mid calf.

Experience has shown that removal of the short saphenous vein should be included in the vast majority of operations for varicose veins. This vein is covered by the deep fascia in the upper part of the leg. It, therefore, may be quite dilated without visible or palpable evidence. Furthermore, there is a great tendency for this vein to become varicosed once the long saphenous vein has been removed. Finally, the short saphenous vein

may contribute to the subsequent development of varicosities in tributaries of the long saphenous vein by way of cross communicating veins.

The chief disadvantage of routine removal of the short saphenous vein is possible injury to the sural nerve. Troublesome paresthesia of the lateral aspect of the foot results if this nerve is traumatized or sectioned. I usually expose the vein through a transverse incision several centimeters above the external malleolus, beginning at the border of the tendon Achilles, and extending forward 2 to 3 cms. The wound is deepened bluntly through the fat until the edge of the tendon Achilles is just visible. The thin superficial fascia is opened sharply. The blue wall of the vein is grasped with a hemostat as soon as it is clearly seen. Otherwise, the vein goes quickly into spasm and turns white so that the vein and accompanying sural nerve now look very much alike. The short saphenous vein is divided, and its distal end ligated. The short saphenous vein is removed by internal stripping technique from ankle to the sapheno-popliteal junction.

Should there be varicosities behind and below the external malleolus, an additional curved incision is made on the foot. The short saphenous vein is religated, and the varicosed tributaries resected through this incision. The sural nerve should be preserved, and, if accidentally cut, should be resutured.

#### Pseudo-Short Saphenous Varicosities (Fig. II C)

Varicosities in the popliteal area may empty into or result from incompetency of the gastrocnemius tributaries rather than from incompetency of the short saphenous vein.<sup>4</sup> The gastrocnemius veins arise from the lateral and mesial head of the gastrocnemius muscle, and join the popliteal vein several centimeters peripheral to the sapheno-popliteal junction.

These pseudo-short saphenous varicosities will remain after a standard sapheno-popliteal ligation. Their surgical correction re-

quires complete exposure of the popliteal vein and ligation of the gastrocnemius tributaries as they enter the popliteal vein, in addition to the sapheno-popliteal ligation.

#### Category II. The Saphenous Vein Tributaries (Fig. III).

##### A. TRIBUTARIES AT THE FEMORO-SAPHENOUS JUNCTION

- (1) Superficial circumflex iliac vein.
- (2) Superficial epigastric vein.
- (3) Superficial external pudendal vein.
- (4) Deep external pudendal—intracanalicular vein.

The various sapheno-femoral tributaries may be missing, doubled, tripled or fused. They may enter the junction by common or multiple trunks. The superficial external pudendal vein and the superficial circumflex iliac vein may receive large tributaries ascending the posterior mesial or anterior lateral aspects of the thigh.

Two branches of the femoral artery cross the sapheno-femoral junction. The superficial external pudendal artery passes over the superficial epigastric vein or over the termination of the long saphenous vein itself. The deep external pudendal artery passes below the junction and under the long saphenous vein, hugging the lower margin of the fossa ovalis. These small arteries bleed profusely when accidentally cut. The femoral artery is just lateral and somewhat superficial to the femoral vein at the sapheno-femoral junction. Because of its superficial position, it is readily injured if blind clamping is employed to control accidental hemorrhage during the sapheno-femoral ligation.

##### B. THE INFRA GROIN TRIBUTARIES

- (1) The posterior mesial tributary.
- (2) The anterior lateral tributary.

The posterior mesial tributary is formed partly by a vein which arises from the short saphenous vein just before the latter enters the popliteal fossa. It, thus, may extend the whole length of the mesial and posterior

aspect of the thigh. In the upper thigh, the posterior mesial tributary is joined by small veins from the gluteal area. The posterior mesial tributary enters the long saphenous vein at various levels in the upper third of the thigh. It may empty into the sapheno-

The anterior vein begins in the center of the ankle and extends up the anterior aspect of the leg to join the long saphenous vein below the knee.

The posterior arch tributary passes from behind the internal malleolus up the mesial

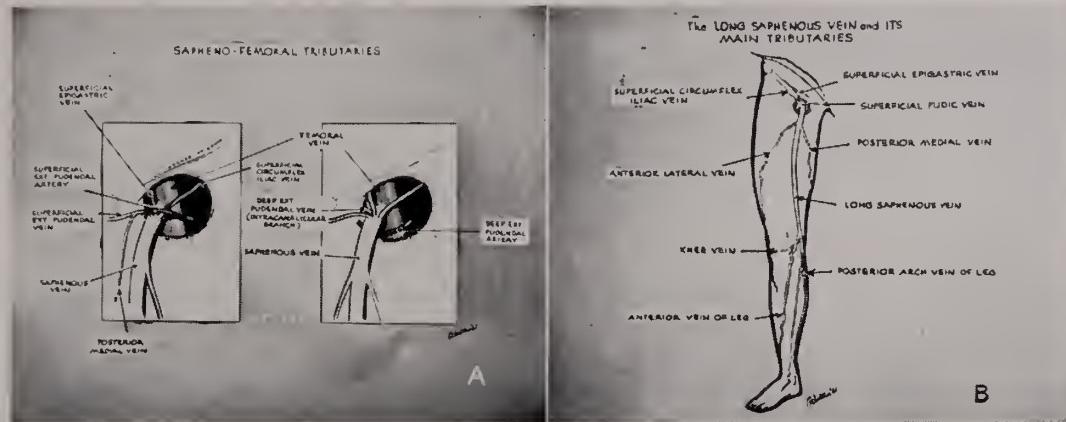


Fig. III. The saphenous vein tributaries.

(a) Tributaries at the sapheno-femoral junction. The superficial epigastric, superficial external pudendal and superficial circumflex iliac veins are shown. Lower left. Note the posterior mesial tributary entering the superficial external pudendal vein instead of the sapheno-femoral junction. Note superficial external pudendal artery crossing the sapheno-femoral junction. On the right, the deep external pudendal artery passes under the saphenous

vein. This artery may be present as two trunks, one superficial to the saphenous vein and the other beneath the saphenous vein.

(b) The two main infra-groin tributaries of the great saphenous vein are illustrated, the anterior lateral vein and the posterior medial vein. Three of the four infra-genu tributaries are shown, the knee vein, the anterior vein of the leg and the posterior arch tributary. The calf group of tributaries is not shown.

Figs. A & B. Redrawn from Dodd & Cockett "Pathology and Surgery of the Veins of the Lower Limb."

femoral junction, into the femoral vein directly or into the superficial external pudendal vein.

The anterior lateral tributary courses diagonally upward from the outer side of the calf, knee and thigh to join the long saphenous vein near or at the sapheno-femoral junction. Instead of terminating in the long saphenous vein, it may enter the superficial circumflex iliac vein or fuse with this vein to enter the long saphenous vein by a common trunk. The anterior lateral tributary is quite superficial in contradistinction to the posterior mesial tributary which rests on the deep fascia with the long saphenous vein in the groin.

#### C. THE INFRA GENU TRIBUTARIES

- (1) The anterior vein of the leg.
- (2) The posterior arch tributary.
- (3) The calf group of veins.
- (4) The knee vein.

side of the leg to join the long saphenous vein at the inner aspect of the knee. It is a fairly constant vein and is often quite large. Three important perforator veins pass between the posterior arch tributary and the posterior tibial vein.

The calf group of tributaries also enters the long saphenous vein below the knee. Originating in the mesial and posterior surface of the calf, they form a conglomerate mass of veins indistinguishable from tributaries of the short saphenous vein. Actually, the calf group of tributaries may connect with the short saphenous vein or be the terminus of the short saphenous vein itself.

The knee vein initiates on the lateral surface of the knee and takes a serpiginous course over or below the patella to empty into the long saphenous vein at the knee. On the lateral aspect of the knee, it may

connect with veins that initiate the anterior lateral groin tributary.

It is to be observed that exclusive of the sapheno-femoral junction tributaries, tributaries enter the long saphenous vein chiefly at 2 levels, at or just below the groin, or at or just below the knee.

#### D. TRIBUTARIES OF THE SHORT SAPHENOUS VEIN

- (1) The lateral leg tributaries.
- (2) The ascending popliteal vein (posterior axial vein of the embryo).<sup>1</sup>

The ascending popliteal tributary takes off from the short saphenous vein near its termination in the popliteal space. It courses up the posterior thigh and then turns mesial-

veins, are fundamental steps in saphenous vein surgery. The high location of the sapheno-femoral junction demands an incision that extends onto the abdomen in most cases. I prefer a hockey stick shaped incision placed mesial to the femoral artery, and extending several cms. above and below the crease in the groin. (Fig. IV)

A curved incision centered above the transverse crease of the popliteal space and passing from one longitudinal groove to the other is used for the sapheno-popliteal ligation. (Fig. II-C)

For the stripping procedure, I prefer intra-luminal strippers of the Zollinger type. These are used to remove the long and short saphenous veins and the larger tributaries.

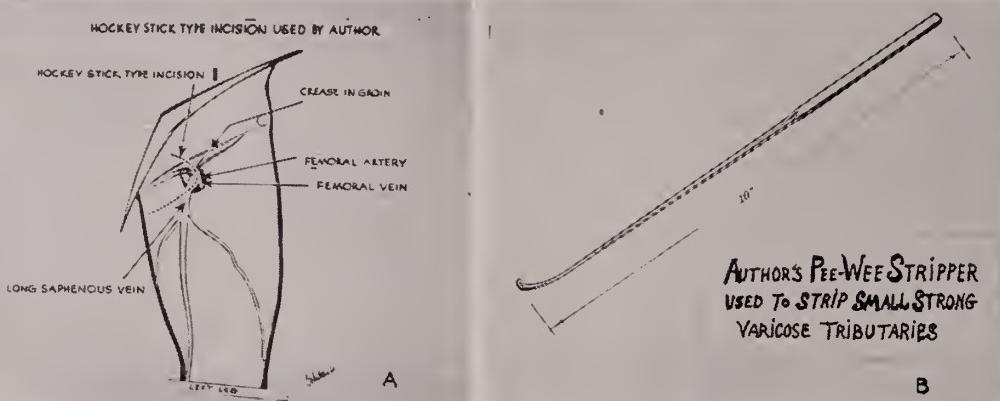


Fig. IV.

- (a) Incision for sapheno-femoral ligation. A curved incision begun about 2 cms. above the crease in the groin and extends below the crease several centimeters. A transverse incision just below the crease in the groin is adequate for thin patients.

ly to enter the long saphenous vein in the groin. It may continue directly upward to empty into the infra gluteal or sciatic vein. This latter arrangement represents a persistence of the posterior axial vein of the embryo. Connecting with the relatively valveless hypogastric vein, the ascending popliteal vein becomes markedly varicosed during pregnancy.

#### Surgical Considerations

The sapheno-femoral and sapheno-popliteal ligation and division, above all tributaries and flush with the femoral and popliteal

The Mayo external strippers are used for the other tributaries. Finger dissection facilitates both internal and external stripping technique. All except the most fragile veins of the superficial system are to be removed by one means or the other. Tributaries should be removed whether or not they are varicosed. Simple division and ligation of tributaries may delay, but does not prevent the later development of a secondary saphenous system. Small strong tributaries are removed with the help of a tiny external stripper made to my specifications by Sklar and Company. (Fig. IV B) The stripper re-

moves small veins with remarkable facility. Fragile and very tortuous veins are removed through step-ladder-like incisions, the veins being dissected from one incision to the other. Doubled and tripled varicose trunks, varicose veins complicated by indurated cellulitis, incompetent perforator veins, require special incisions.

The fairly constant posterior medial groin tributary of the long saphenous vein can usually be reached with the finger through the groin incision. I, therefore, routinely divide this vein from the saphenous as soon as the sapheno-femoral dissection has been completed, and before any stripping is begun. This vein is subsequently stripped down as far as possible, bearing in mind that it may extend to the short saphenous vein in the popliteal space.

The anterior lateral groin tributary may be located similarly, or it may be found terminating in the superficial circumflex iliac vein at the sapheno-femoral junction, or in the long saphenous in the upper thigh. Failure to remove these important thigh tributaries is a frequent cause of recurrence after saphenous vein surgery.

Below the knee, the anterior vein of the leg, the posterior arch tributary, the calf group of veins and the knee vein are all removed. A vertical incision (Cockett's) beginning behind the internal malleolus and extending upward several inches may be required for removal of the lower segment of the posterior arch tributary. A large oblique or transverse calf incision may be required for en masse resection of the calf group of veins. Small transverse incisions are used to dissect out or avulse the serpiginous knee vein.

### Category III.

#### The Cross-Communicators (Fig. V).

This term is used to designate superficial veins passing obliquely or transversely between the main trunk and tributaries of the long and short saphenous veins. An important cross-communicator passes between the

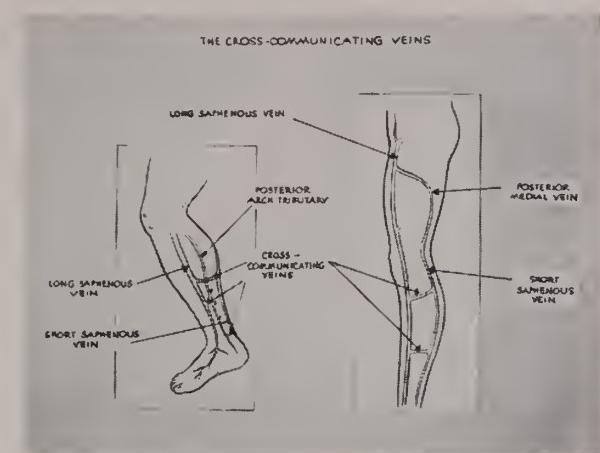


Fig. V.

Right. The posterior mesial tributary of the great saphenous vein joins an ascending tributary of the short saphenous vein. Cross communicating veins in the calf are illustrated.

Left. Cross communicating veins are illustrated connecting the main trunk of the long saphenous vein and the short saphenous vein and the posterior arch tributary of the great saphenous vein.

long saphenous vein and its posterior arch tributary several inches above the ankle. Two fairly constant cross-communicators connect the posterior arch tributary with the short saphenous vein.

#### Surgical Consideration

The cross-communicator from the long saphenous to its posterior arch tributary permits a reflux of blood from the deep veins into the long saphenous via the perforator veins in the area of the posterior arch tributary.

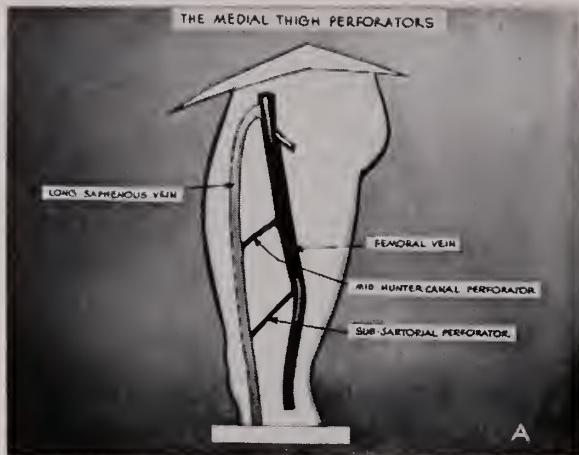
Due to the cross-communicator veins, the effects of incompetency of the long saphenous vein are transmitted to the short saphenous vein and vice versa. Thus, the varicose state of one system tends to cause similar pathology in the other system.

#### Category IV. The Perforator Veins (Fig. VI).

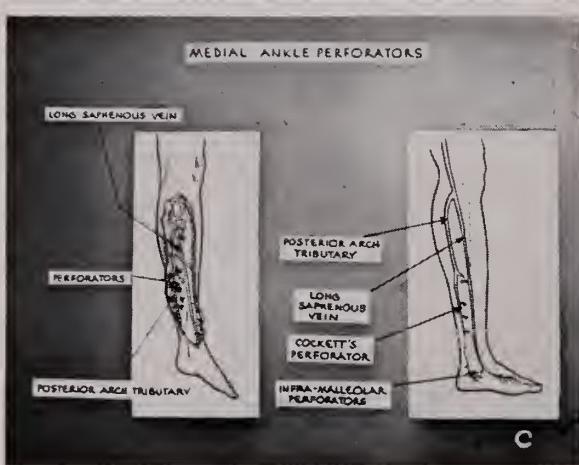
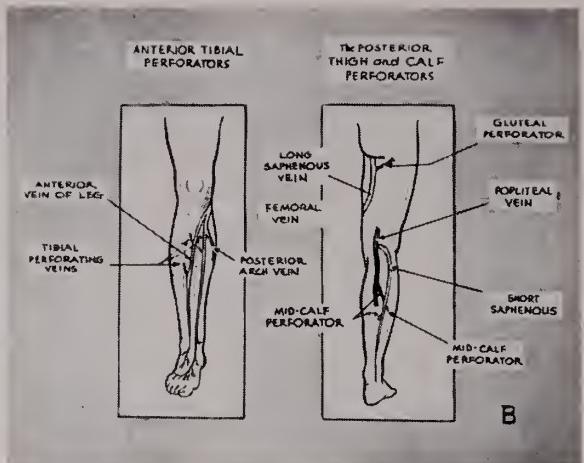
##### A. PERFORATOR VEINS IN THE THIGH.

- (1) High Hunter canal perforator.
- (2) Mid Hunter canal perforator.
- (3) Subsartorial perforator.
- (4) Posterior thigh and gluteal perforators.

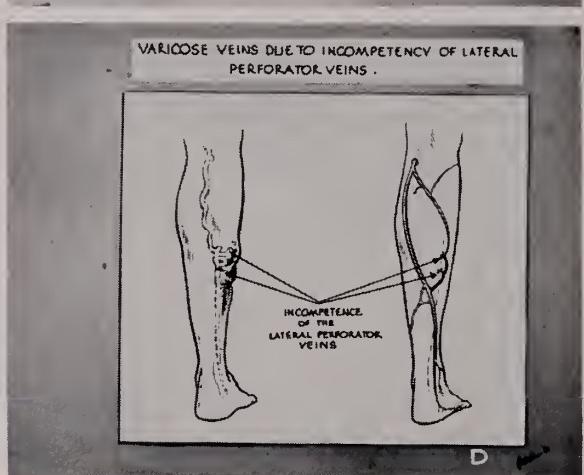
The Hunter canal perforators leave the



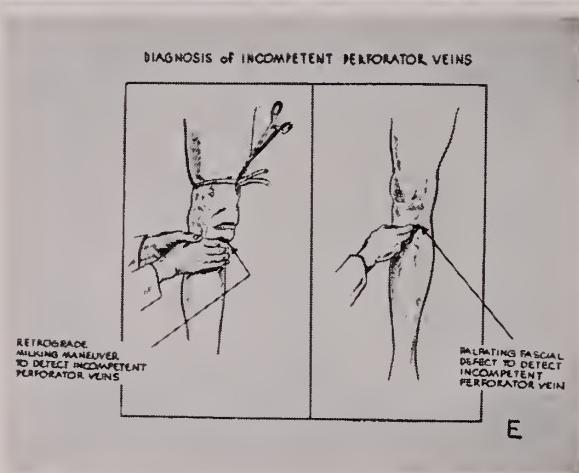
A



C



D



E

femoral vein at the upper and middle third of Hunter's canal to pass downward and inward to join the long saphenous vein in the thigh. They are thus direct perforators. The subsartorial perforator leaves the lower femoral vein to descend in the deep portion of Hunter's canal to join the knee plexus of veins and the long saphenous vein just above

- (a) The mid Hunter canal and the subsartorial perforators are illustrated. Thigh perforators are usually direct, passing between the main trunk of the great saphenous vein and the deep veins.
- (b) The anterior tibial, posterior thigh, and calf perforators. All of these perforators are usually indirect, that is, pass between tributaries of the great saphenous vein or short saphenous vein and the deep veins. The anterior tibial perforators are usually in the upper third of the leg.
- (c) The medial ankle perforators. The middle of the three medial ankle perforators is often quite large and frequently incompetent, and the usual cause of stasis ulceration. (Cockett's perforator). All three of these perforators pass between the posterior arch tributary of the great saphenous vein and the posterior tibial vein. Note the infra-malleolar perforators which explain recalcitrant stasis ulcers below the malleoli.
- (d) Lateral leg perforators. Again indirect perforators passing between tributaries of the short saphenous vein and the peroneal vein.
- (e) Diagnosis of incompetent perforator veins.

Figs. A. B. & C. Redrawn from Dodd & Cockett "Pathology and Surgery of the Veins of the Lower Limb."

the knee.<sup>2</sup> The posterior thigh and gluteal perforators empty into the deep veins of the thigh and into the inferior gluteal vein in the buttock area.

## B. PERFORATORS IN THE LEG.

- (1) The medial ankle perforators.
- (2) Anterior tibial perforators.
- (3) The mid calf perforator.
- (4) Gastrocnemius soleus group.
- (5) The lateral group.
- (6) The infra-malleolar perforators.

The medial ankle perforators are three in number, upper, middle and lower. They pass between the posterior arch tributary and the posterior tibial vein. The great importance of these perforators is elaborated under "Surgical Considerations".

The anterior tibial perforators consist of three groups, lateral, medial and central. They are mostly in the upper part of the leg, and connect the tributaries (and/or the main line) of the long saphenous vein with the anterior tibial vein.

The mid calf perforator leaves the lower part of the popliteal vein, and descends between the heads of the gastrocnemius to the middle third of the calf where it pierces the deep fascia and joins the short saphenous vein. It is, thus, a direct perforator. The gastrocnemius soleus group of perforators connects tributaries of the short saphenous vein and the muscular veins of the gastrocnemius and soleus muscles. They form lines of perforators to either side of the midline.

The lateral group of perforators connects tributaries of the short saphenous vein with the peroneal vein.

There are, thus, perforator veins in association with the three deep veins of the leg—anterior tibial, posterior tibial and peroneal.

### *Surgical Considerations*

Classically, the venous state is attributed to a reflux of blood at the sapheno-femoral and sapheno-popliteal junction, due to valvular incompetency at these sites. The normal direction of blood flow through the perforator veins is from the superficial veins to the deep veins. When the valves become incompetent, the perforator veins provide a second mechanism by which blood reaches the surface veins from the deep veins. As the

gradient of venous pressure in the lower extremities is greatest the further from the heart level, the perforator veins, when incompetent, may permit the reflux of more blood under greater pressure to the surface veins than occurs through the classic sites. The venous pressure may approximate that of the arterial end of the capillary loop so that arterial inflow is inhibited. Anoxia and venous stasis set the stage for leg ulceration.

The most significant perforators are those of the medial side of the ankle. The middle one of these perforators is situated about four finger breadth above the internal malleolus, and one-half inch to one inch posterior to the lower margin of the tibia. This perforator is fairly constant, and when incompetent, may be a centimeter in diameter. Cockett<sup>1</sup> has emphasized the role of this perforator in the etiology of secondary varicosities, indurated cellulitis and stasis ulceration. Cockett's perforator has become familiar terminology in angiology literature.

Valvular incompetency of the perforator vein may be congenital, may be acquired with the stress of man's life in the erect position, or may be acquired as the aftermath of deep vein thrombophlebitis. Incompetent perforator veins should be suspected:

- (1) When the varicosities are congenital.
- (2) When the varicose state is unusually extensive.
- (3) In stasis ulceration.
- (4) In indurated cellulitis.
- (5) In secondary varicosities—secondary to deep vein thrombophlebitis.

A number of methods of diagnosing incompetent perforator veins pre-operatively are available. I use primarily:

- (1) The tourniquet test.
- (2) The retrograde milking maneuver.<sup>5</sup>
- (3) Palpation of fascial defect.<sup>6</sup>
- (4) Venography.<sup>7</sup>

The surgical management of varicose veins includes subfascial ligation of as many perforator veins as possible. Most perforators are indirect, between the tributaries and the

deep veins, rather than between the main trunks and the deep vein. Surgery limited to the long and short saphenous vein will therefore miss most perforators. An important phase of modern saphenous vein surgery consists of dissection of the tributaries with the connecting perforator veins in mind. The course of each tributary must be clarified. Any branch regarding the stripper must be traced to be sure it does not extend deeply, and thus be a perforator vein.

Perforator veins may be ligated subfascially by either an extrafascial or subfascial operation. In the extrafascial approach, the veins are dissected to their foramen in the fascia, ligated, sectioned and allowed to retract. The fascial defect is sutured. Cockett's operation<sup>1</sup> for ligation of the medial ankle perforators is an extra-fascial one. The incision is vertical, beginning in the lower calf, one finger's breadth behind the posterior margin of the tibia, and extending down to a point one inch above and behind the internal malleolus. A Cockett incision should be made in most surgical efforts for varicose veins. A dilated posterior arch tributary and associated perforator veins will be encountered with surprising frequency.

In the subfascial operation, long incisions are deepened directly through the deep fascia, the flaps of skin, subcutaneous tissue and fascia are dissected back, and the perforator veins ligated and divided as they enter the muscle. Incisions employed for the subfascial operation include:

- (1) Linton's staged incision through the mesial, anterior and posterior compartments of the leg.<sup>8</sup>
- (2) The Kondoleon incision—similar to the medial compartment incision of Linton.
- (3) The stocking seam incision. A long vertical subfascial incision in the mid calf.<sup>9</sup>

The surgery of stasis ulceration includes wide resection of the ulcer, its underlying bed and fascia, and ligation of associated perforator veins. Intractable small stasis

ulcers on the side of the foot are due to incompetent inframalleolar perforator veins. Such ulcers rarely remain healed unless the underlying perforator vein is divided.

Perforator veins may also have surgical significance when their valves are patent and functioning normally. Through them, superficial thrombophlebitis initiated in varicosed long or short saphenous veins may propagate into the deep vein with dire consequences. The injection of sclerosing solution into a varix opposite a perforator may result in deep vein thrombosis. Finally, on three occasions, I have been surprised to find the internal stripper passed upwards from the ankle, resting in the groin in the femoral rather than in the saphenous vein. The stripper has ascended the long saphenous to a perforator vein, and then had passed via the perforator into the deep venous system,

### Summary

Four categories of superficial veins are involved in the varicose state — the main trunks, the tributaries, the cross communicators and the perforators.

The principal variations of the long saphenous vein in the thigh are duplication and parallelism. The principal variations of the short saphenous vein are related to its termination, which may be normal, high, low or doubled.

Exclusive of the sapheno-femoral tributaries, tributaries enter the long saphenous at two levels, the infra-groin area and the infra-genu area. There are two fairly constant thigh tributaries, the posterior mesial and the anterior lateral veins. There are four infra-genu tributaries, the anterior vein of the leg, the posterior arch tributary, the calf group, the knee vein.

The cross communicators permit the varicose state of the long saphenous vein to affect the short saphenous vein and vice-versa.

The perforator veins, when incompetent, constitute a second mechanism whereby venous blood, under great pressure, reaches the surface veins. The following perforator

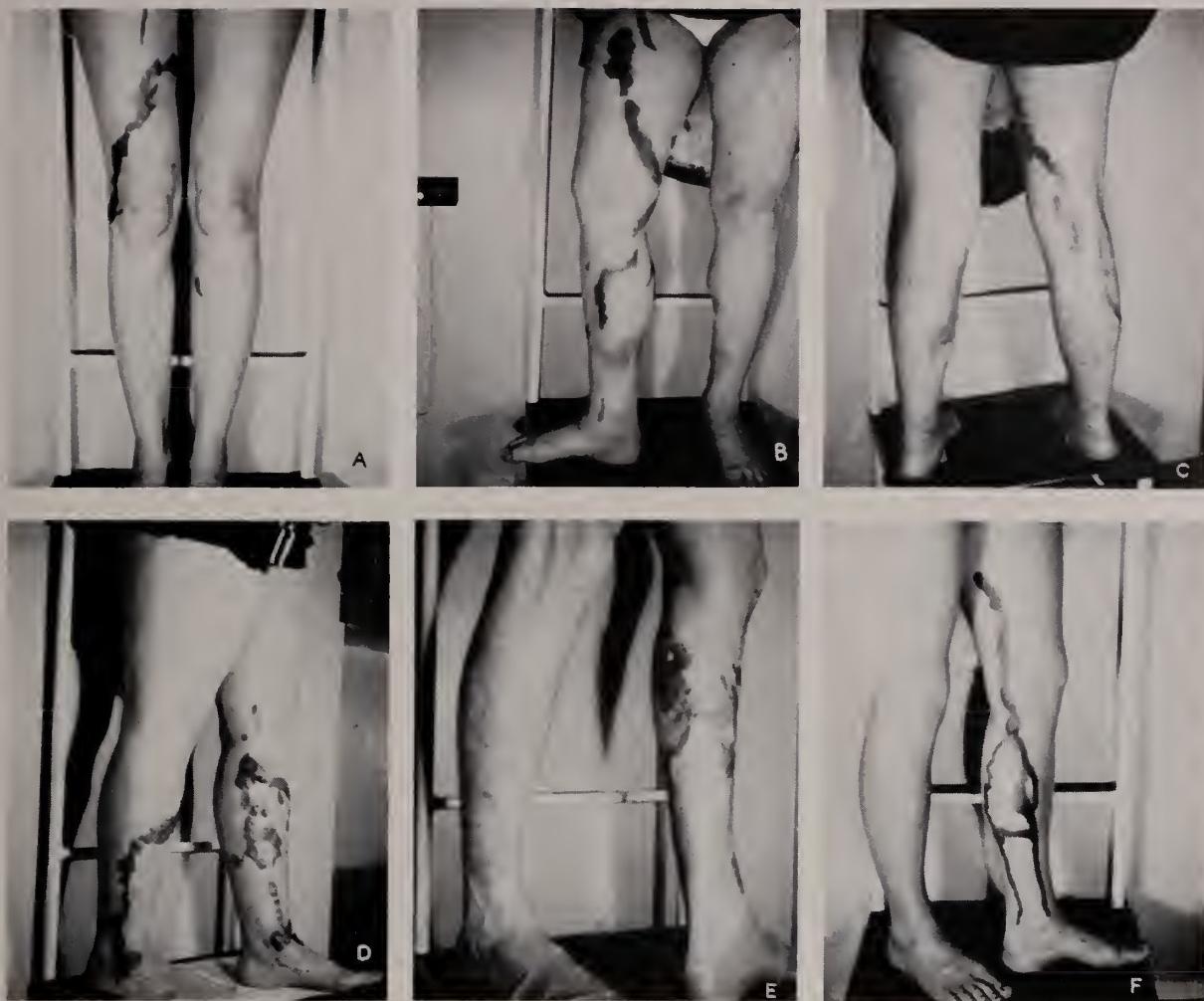


Fig. VII.

- (a) The anterior lateral vein begins on the lateral aspect of the knee, and passes across the thigh to enter the great saphenous vein well below its usual point of entrance at the sapheno-femoral junction.
- (b) The posterior mesial thigh tributary of the great saphenous vein begins with a tributary that takes off from the short saphenous vein. It ascends the mesial side of the thigh to the sapheno-femoral junction. Termination of the anterior infra-genu tributary is also seen.
- (c) Tributary of the short saphenous vein ascending the leg to anastomose with the posterior mesial tributary of the great saphenous vein.
- (d) Left. A lateral tributary of the short saphenous vein is seen. A cross communicator joins this vein with the long saphenous vein. Right. The knee tributary and the anterior vein of the leg are seen. A perforator vein is indicated in the mesial side of the calf.
- (e) The calf group of veins consisting
- of tributaries from both the long saphenous and short saphenous vein is illustrated.
- (f) Note cross communicator in mid leg joining the main trunk of the great saphenous vein and its posterior arch tributary.
- (g) Cross communicator veins are seen, just above the ankle the mid calf perforator is illustrated.
- (h) Note the knee tributary of the great saphenous vein, the anterior vein of the leg, the posterior arch tributary, cross communicators and the middle mesial calf perforator (Cockett's perforator). Left. The anterior vein of the leg is well illustrated.

veins have been encountered: in the thigh, the mid Hunter canal, the subsartorial and the gluteal perforators; in the leg, the medial ankle, anterior tibial, mid calf, gastrocnemius soleus, lateral, and inframalleolar perforations.

Perforator veins are in association with each of the deep veins of the leg, anterior tibial, posterior tibial and peroneal veins. Secondary incompetency of the thigh perforators explains some instances of recurrence of varicose veins after saphenous vein surgery. The medial ankle perforators are most significant in the etiology of stasis ulceration and indurated cellulitis. (Fig. VII)

### Conclusions

In saphenous vein surgery, removal of all sizable tributaries, whether or not varicosed, and subfascial ligation of perforator veins parallel in importance the high sapheno-femoral and high saphenous-popliteal ligation and the stripping of the long and short saphenous veins. Saphenous vein surgery is more effectively performed when the surgeon has the knowledge of varicose anatomy, and directs his attention to the categories of veins herein described.

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### How to Judge the Quality of a Drug

There is no person alive who can take a bottle of pills, look at them, feel them, smell them and taste them and tell you whether or not they are of high quality. We all know that most people can pretty well determine the quality of textiles, and experts can tell exactly what the quality is by using ordinary senses. This is not so with drugs. I repeat the only way you can reasonably judge the quality of a drug is by relying on the reputation of the name on the label.—Joseph E. Snyder, M. D., Assistant Vice President, New York Presbyterian Hospital, to American Hospital Association.

# Evaluation of the Common Duct at Operation

MORTON C. WILHELM, M.D.  
ARTHUR M. SMITH, M.D.  
Charlottesville, Virginia

*When faced with the problem of whether to explore the common bile duct, the surgeon should consider its size and the characteristics of its contents.*

THERE IS GENERAL AGREEMENT in regard to the indications for exploration of the common duct. The wide variation in the incidence of exploration, from 10 to 45 per cent,<sup>1</sup> is evidence that the application of these indications varies greatly. The absence of clear definition of terms perhaps accounts for some of the variation. A dilated common duct is one of the accepted indications for exploration, yet there is a wide divergence of opinion expressed in the literature on what constitutes a dilated common duct.

Some have stated that they have never found a stone in a normal-sized duct, yet Waugh<sup>2</sup> reports 15 per cent of the stones in his series were found in ducts of "normal" size. Bartlett<sup>3</sup> defines a dilated duct as one measuring 1 cm. or more in its outside diameter. He measures the size of the duct by comparing it with a Bâkes dilator as described by Baker and Koutsky<sup>4</sup> and 53 per cent of the dilated ducts in his series contained stones. Feris and Vibert<sup>5</sup> measured at operation 98 common ducts which differed in size from 4 to 17 mm., the average diameter being 8.8 mm.; in none of these, however, was there pathologic change as shown by inspection, palpation, operative

cholangiogram or exploration. In eleven other ducts in which they found stones, the size ranged from 7 to 17 mm., averaging 10.9 mm. They considered that the apparently normal duct had an average diameter of 8.8 mm. Liechting<sup>1</sup> found no stones or other pathologic conditions at the time of surgery in ducts less than 1.2 cm. in diameter and concluded that this was the critical diameter of the duct above which stones were frequently found. In contrast to Feris and Vibert, they took their measurements below the apparent entrance of the cystic duct which could account for the difference in their conclusions regarding the dimensions of the normal duct.

We have measured the common duct at operation in 138 cases and have examined bile aspirated from the common duct in 130 cases. It is the purpose of this paper to discuss the results of this study and re-emphasize certain points in the technique of palpation of the cystic and common ducts. Since measurements of the common duct made on cadavers do not take into consideration biliary pressure, muscular action of the duct, and circulating blood and lymph, we do not consider such measurements to be strictly comparable to measurements of the common duct at operation. The same opinion holds true regarding delineation of the duct size by roentgenogram, for the true dimensions may be distorted depending upon the size of the patient, the distance of the tube from the patient, and the thickness of the wall of the duct.

## Measurement of Common Duct

To determine the actual size of the duct at operation, we began measuring the common hepatic duct with calipers. (Fig. 1)

In our opinion measurements of the common hepatic duct should be made just above the apparent junction with the cystic duct for the following reasons: 1—Careful examination of the inside of the duct following choledochotomy demonstrates that there is no difference in the size just above and

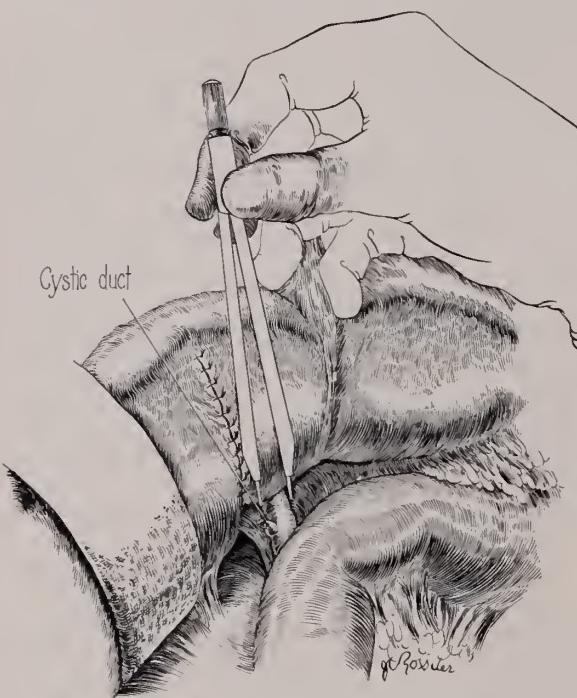


Fig. 1.

below the entrance of the cystic duct. 2—The cystic duct frequently runs in close continuity with or in the wall of the common duct for some distance before entering it which complicates obtaining a true measure of the diameter of the common duct below the apparent junction of the cystic duct without also including the diameter of the cystic duct in the measurement.

The data on 138 measured cases is shown in Table 1. Of 39 patients who were explored, 22 were found to have stones, thus 28.5 per cent of the total series of patients were explored and stones were found in 56 per cent of those explored or 15.9 per cent of the total group. We classified a positive exploration as one in which stones or gravel were found. The 22 ducts which contained stones ranged in size from 7 to 15 mm., averaging approximately 10 mm. There were

116 cases in our group which showed no indications for exploration or which were negative or exploration. The size of the duct ranged from 5 to 14 mm. with an average size of 7.6 mm.

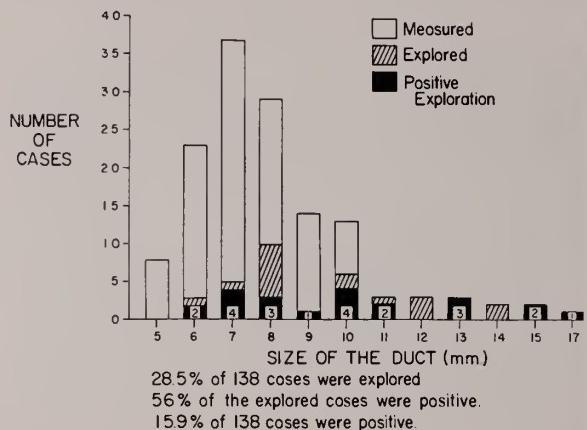


Table I. Data on Common Duct Measurements.

We have used the criteria of 1 cm. as the upper limit of normal in size for the common duct. Table 2 shows that 124 of the

TABLE II	
COMMON DUCTS MEASURING 1 CM. OR LESS	
Number of Ducts measuring	
1 cm. or less	124 or 90% of total
Number explored	25 or 20% of this group
Positive exploration	14 or 56% of those explored
	(6 in ducts of 6 to 7 mm.)

REASONS FOR EXPLORATION	
Jaundice	10 (6 positive)
Small stones, turbid bile	5 (5 positive)
Small stones	9 (3 positive)
Size alone	1 (0 positive)

ducts measured 1 cm. or less. The indications for exploring the ducts of 1 cm. or less in diameter are also shown in this table. Twenty five or 20 per cent of these were explored and stones were found in 14. It is of particular interest that in six of the positive explorations, the ducts measured only 6 to 7 mm. in diameter. It is readily apparent, then, that stones do occur in normal-sized common ducts, a conclusion also drawn by Feris and Vibert<sup>5</sup> in their carefully studied series of cases. Table 3 shows the data on 14 ducts which measured over 1 cm. in diameter. All of these were explored and eight were found to contain stones. The indica-

TABLE III

## COMMON DUCTS MEASURING OVER 1 CENTIMETER

Number of ducts measuring	
over 1 cm.	14 or 10% of total
Number explored	14 or 100% of this group
Positive explorations	8 or 57% of those explored

## REASONS FOR EXPLORATION

Palpable stones	2 (2 positive)
Jaundice	5 (3 positive)
Small stones, turbid bile	2 (2 positive)
Small stones, dilated duct	4 (1 positive)
Size alone	1 (0 positive)

tions, some absolute and others relative, for exploring this group are also seen in the table.

This study has shown that the common duct appears larger in diameter than it is on actual measurement. The common duct frequently was seen to contract sometimes as much as 2 to 3 mm. during the dissection of the cystic duct and artery and exposure of the common duct. Such an occurrence further complicates the determination of the true size of the duct.

## Turbid Bile or Sediment

There is little mention in the current literature regarding aspiration of the common duct for detection of turbid bile or sediment. Lahey,<sup>6</sup> O'Shea,<sup>7</sup> and others,<sup>8</sup> however, have included this finding in their list of indications for exploration. We aspirate the common hepatic duct just above its junction with the cystic duct. The cystic duct and artery are identified and ligated, and the duct is aspirated. A tonsil syringe with a number 20 needle is used for the aspiration. There is little probability that, during this procedure, turbid bile or sediment from the gallbladder will be expressed through the cystic duct and become mixed with common duct bile at this level. The bile is inspected in the syringe and then emptied onto filter paper to better detect the presence of sediment.

The data on 130 cases is shown in Table 4. Turbid bile or sediment was found on aspiration in 26 of the 130 cases. On exploration 17 or 65 per cent of the ducts were found to have stones. On the other hand, seven ducts which yielded clear bile on as-

TABLE IV

## SUMMARY OF CASES ASPIRATED FOR THE DETECTION OF TURBID BILE

Number of ducts aspirated	130
Number with turbid bile	26
Positive explorations with turbid bile	17 or 65% of those with turbid bile
Positive explorations without turbid bile	7

piration were explored for other reasons and stones were found. The presence of turbid bile or sediment is not used by us as an absolute indication for exploration of the common duct, but it has been an aid in conjunction with the other relative indications in determining the need for exploration.

The indications for common duct exploration and a technique for palpation of the common duct has been previously reported.<sup>9</sup> (Fig. 2) Palpation of the common

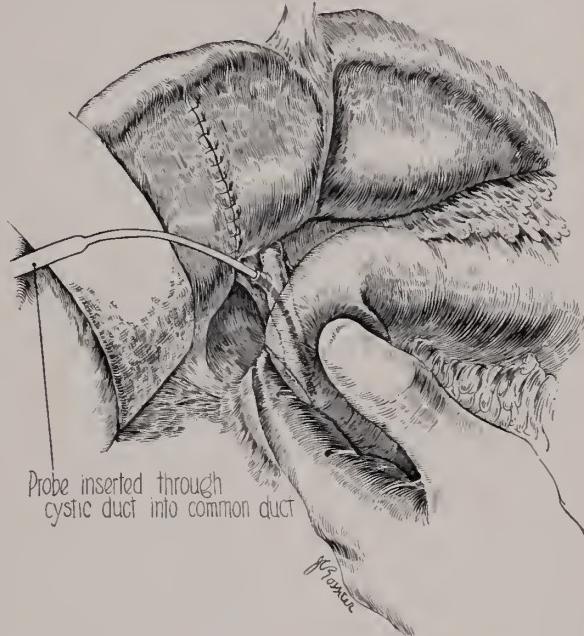


Fig. 2.

duct over a probe which has been passed through the cystic duct into the common duct and then into the duodenum is of significant benefit in evaluating both the common and cystic duct, and allows accurate determination of the true course of the distal common duct and careful identification and evaluation of the common duct and ampillary area. Patency of the cystic duct is assured, and small stones previously un-

detected have been found impacted in the cystic duct. This technique often demonstrates that the cystic duct runs in continuity with or within the wall of the common duct for several centimeters before entering it; therefore, the cystic duct stump is often longer than the surgeon realizes. We do not think this is important so long as the cystic duct is patent and contains no stones. This conclusion has also recently been stated by Warren<sup>10</sup> of the Lahey Clinic.

### Conclusions

1—A study of 138 common ducts has led to the belief that there is a definite tendency to overestimate the size of the common duct. 2—The true size of the common duct is best determined just above its junction with the cystic duct. 3—The upper limit of normal of the external diameter of the common duct is 1 cm. 4—Stones do occur in normal-sized common ducts. 5—The common duct may contract as much as 2 to 3 mm. during the course of an operation. 6—Turbid bile or sediment alone is not an absolute indication for exploration, but is considered a relative indication in the presence of other pertinent findings. 7—Palpation of the duct over a probe is a helpful maneuver in evaluating both the common and the cystic ducts.

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### Recent Books

W. B. Saunders Company features the following recent books in their advertisement appearing in this issue:

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# The Surgical Treatment of Aortopulmonary Fenestration

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*Aortopulmonary fenestration, one of the less frequently seen congenital anomalies, can be diagnosed with the aid of cardiac catheterization and retrograde aortography. Successful surgical treatment produces a cure.*

**A**ORTOPULMONARY FENESTRATION or partial persistent truncus arteriosus is undoubtedly not as rare a congenital lesion as earlier statistics have suggested. This defect is also called aortic septal defect or aortopulmonary window.

In 1949 Perelman and Putschar<sup>7</sup> were able to assemble only 14 cases from the literature. Skall-Jensen<sup>10</sup> reported 64 additional patients collected between 1949 and 1956 inclusive. In only 10 of these had the diagnosis been definitely established prior to operation or death. A moderate number of surgically treated cases has been reported since 1956.

Embryologically the defect appears during the fifth to the eighth week of intrauterine development through an incomplete formation of the truncoconal septum. The opening is usually large, although it may vary from five to thirty millimeters in diameter. Its proximal margin is located about five to ten millimeters distal to the aortic valve and therefore presents within a few

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Abstracted from paper presented before the Virginia Surgical Society, Williamsburg, May 20, 1961.

millimeters of the edge of the myocardium.

The symptoms which characterize the condition are frequent respiratory infections, failure to gain weight and develop normally, dyspnea on exertion and excessive fatigue. Death in infancy usually results from pulmonary infection and heart failure. Clinical differentiation from other large left to right shunts may be difficult, and confusion with interventricular septal defect and patent ductus arteriosus is common.

Hemodynamically, the defect resembles the high pressure patent ductus and a continuous murmur is therefore frequently absent. Our patients exhibited only a systolic murmur. Pulmonary hypertension is reflected in the loud, banging pulmonary second sound.

In all patients, an increase in oxygen saturation was demonstrated at the pulmonary artery level during cardiac catheterization. Differentiation from a patent ductus arteriosus, however, can usually not be made unless the catheter is passed through the aortic septal defect and the more medial or anterior position of the catheter demonstrated by fluoroscopy or by passage of the catheter into one of the aortic arch vessels.

Retrograde aortography with the catheter positioned in the ascending aorta clearly demonstrated the defect in each. (Fig. 1)

The surgery of aortopulmonary fenestration has progressed through several stages. Ligation or suture ligation, first successfully employed by Gross,<sup>5</sup> was recognized as potentially hazardous and likely to result in incomplete closure. It was certainly not appropriate for a large defect. Successful employment of this technique, however, has been reported by Varco<sup>11</sup> and by Davis.<sup>4</sup>

Bailey achieved nearly complete closure of a large defect by placing two rows of parallel mattress sutures without division.<sup>1</sup> A distinct advance was made with the report by Scott and Sabiston<sup>9</sup> of the successful division

The three surgical cases were four, one and a half and three years of age. In each instance cardiopulmonary bypass was established, the aorta occluded, and the defect divided and sutured. (Figs. 2, 3) The first



Fig. 1. Retrograde aortogram with injection in ascending aorta showing immediate filling of the pulmonary vascular bed.

and suture of this defect using thin Potts vascular clamps. Scott, Kirklin<sup>9,6</sup> and Baronofsky<sup>2</sup> reported additional cases managed by this technique. However, the dissection required for adequate isolation of the defect and the application of clamps to vessels under high pressure may be extremely difficult and dangerous, and has led in a number of instances to laceration of one of the vessels with resulting fatal hemorrhage. Ross<sup>8</sup> and Cooley<sup>3</sup> described the successful use of hypothermia with inflow occlusion in order to deflate these vessels and facilitate the application of the clamps.

The application of cardiopulmonary bypass to this problem has seemed a further logical advance and apparently was first accomplished by Cooley in two patients.<sup>3</sup> Minimal dissection is required prior to severance of the fenestration. Major hazards introduced are the interruption of coronary flow and the likelihood of inducing coronary air embolism unless special precautions are taken.

We have observed five patients with this defect. Surgery was attempted in three of these and in two the outcome was successful. The correct diagnosis was made preoperatively in all three.

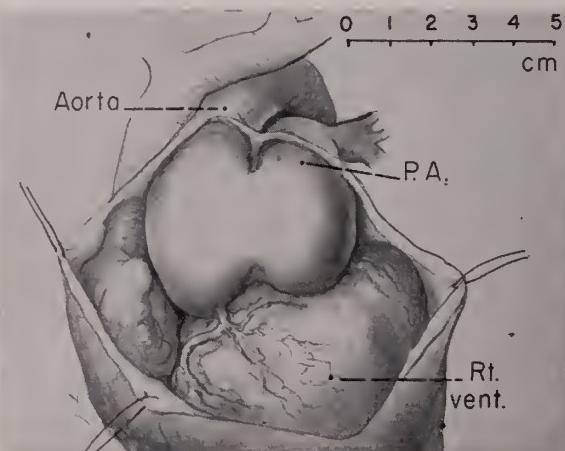


Fig. 2. Drawing of aortopulmonary fenestration encountered at surgery.

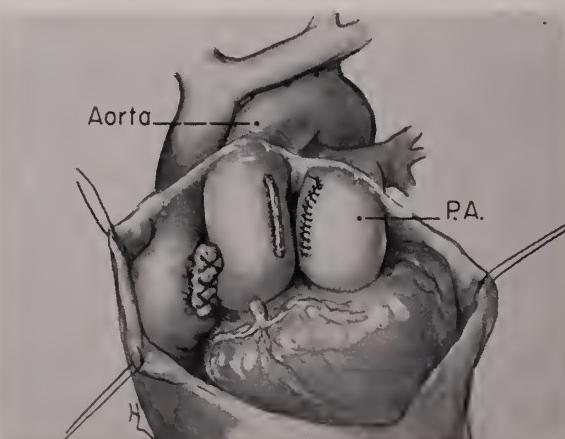


Fig. 3. Appearance after surgical division.

patient recovered well although not without postoperative complications. A transient left hemiparesis occurred on the fourth postoperative day, but completely cleared. Chylothorax developed and required reexploration and ligation of the thoracic duct. Four years postoperatively, cardiac catheterization reveals normal hemodynamics.

The second patient died twelve hours after surgery, presumably from cardiac failure, to which coronary air embolism may have contributed. The third patient made an uneventful convalescence except for a thrombocytopenia of 6000 determined on the fourth postoperative day when mild rectal bleeding occurred. This responded rapidly to Meticortelone. The present condition of this patient is excellent.

### Summary and Conclusions

1. The clinical picture of aortopulmonary fenestration has been reviewed and the important role of cardiac catheterization and retrograde aortography in the early diagnosis of this lesion emphasized.

2. The history of the surgical treatment leading to the routine use of extracorporeal circulation has been summarized.

3. Three patients have been treated surgically, two of whom survived. A brief summary of these patients has been presented.

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### Egg's Cholesterol

The method of cooking an egg does not alter its cholesterol content, according to Philip L. White, Sc.D., secretary of the Council on Foods and Nutrition, American Medical Association.

Writing in the January Today's Health, published by the AMA, he said:

"The length of time that an egg is boiled

in no way affects its cholesterol content. There are approximately 340 milligrams of cholesterol per egg, and once the egg has been laid the cholesterol value remains essentially the same."

Cholesterol is a fatty substance some medical investigators believe is a causative factor in coronary artery disease.

# Surgical Experience in South Vietnam

MARTIN DONELSON, JR., M.D.  
Danville, Virginia

*An interesting first-hand report  
on work with Medico, Inc.*

IT WAS A PRIVILEGE for me to sign a six weeks' contract last fall with Medico, Inc., and spend a full four weeks last December doing surgery in a provincial hospital in Vietnam. My expenses for the world-circling trip were completely paid, and I received a stipend for the full time plus an expense allowance, term insurance, and help with my visas. The New York office of Medico gives the impression of an efficient and well-run, if benevolent, business.

I was assigned to the provincial hospital of Quang Ngai, a town of perhaps two thousand, which serves a province of seven hundred thousand people. During my stay there, the regular Medico team consisted of one internist and two medical technicians. These volunteers had signed up for a one-year extendable stay and the fact that they were free to leave at any time made it a little easier for me to serve with them as such a short-timer. They were wonderful people, and I grew to hold them in high respect. Where else in the world might you find a qualified internist who is not above doing major surgery when the need arises?

Besides the Medico team, there was one Vietnamese doctor, an excellent man, although he had never been to medical school. Relations were cordial, although there were occasional administrative frictions that were happily beyond my scope. The chief difficulty seemed to center around the American

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idea of efficiency and economy versus the Asian idea of prestige or face. In general, things went very well, considering the large difficulties involved. Much of this was due to the hard-working native nurses, midwives, and technicians.

The living was quite comfortable during my stay. The floods were over and the weather was lovely. The team and our four interpreters shared a house with a houseboy and cook. We slept on foam rubber mattresses under mosquito nets. I found the siesta a little irksome at first because it seemed a shame to almost button up the hospital in the middle of the day with so much to do.

The food was excellent. I found that by skipping uncooked vegetables and fruit, I could avoid the Asian equivalent of the Mexican turista. It was a special pleasure to take some meals in native homes. The food was delicious, and if I developed cramps afterwards, I found Lomotil® a specific. Failing all else, it was comforting to remember that Asian toilets are recommended by all proctologists, presumably because of the crouching posture, but actually I found because the extremely uncomfortable position encourages efficiency and prevents dawdling.

The greater part of the work was medical. The standard of living and hygiene in Vietnam is sub-marginal. The average income is said to be around fifty dollars U. S. a year. Tuberculosis is extremely common, the diagnosis made in about one out of three clinic fluoroscopic examinations. X-ray film was not available. I saw my first cases of leprosy, kwashkiokor, and a giant polyposis of the nose. Malaria is endemic and must be considered in all ill or injured patients. Nephrosis is common and avitaminoses, especially beri-beri. Rice polishing machines

are now, unfortunately, in general use.

My observations were, of course, limited, but I was told that hypertension and heart disease are almost unheard of outside the capital, as are appendicitis, gall bladder disease and hysteria. The people look unwrinkled and young; still, they do not live nearly as long as we do.

The Vietnamese people are sober but fun-loving. They chafe under the restrictive, pro-western rule of President Diem, but it is hard to criticize him when one considers the nature and extent of his problems.

The scope of the surgery was a real pleasure for a general surgeon who has watched the perimeters of his specialty shrink in several areas during the past two decades.

Our chief problem was casualties from the almost constant guerilla activity; many of these were civilians, women and children. One ward was devoted to them. We were able to transfer a good many soldiers to military hospitals for further care. Fractures of all sorts were common. The next most frequent condition was Caesarean section. There were fifteen during my stay there. The proportion of spontaneous births was very respectable because of a nearby maternity center.

The ovarian cysts one sees for surgery are usually as large as a football or a full-term pregnancy. Patients occasionally have their abdomens marred by acupuncture or Oriental ointment which may burn deep blisters.

I saw only one man with a possible ureteral calculus, but bladder stones were commonplace. These cases are often handled under local by male nurses. I had one case of perforated bladder, due to impalement per anum on a bamboo sliver.

There were many cases of hare-lip and two of imperforate anus with recto-vaginal fistula. There was one case each of complete contracture of arm and leg due to neglected burns.

Carcinoma of the cervix was distressing because there was no radium or x-ray, neither was there any pathology service. I operated on two cases of complete vaginal

prolapse, one of absent vagina, one of vaginal stenosis. I saw no cases of vesicovaginal fistula during my short stay. I felt that the obstetrical care I saw was very good and the midwives were well-trained in the nearby training center.

There were several cases of very large goiter, but only two of these came to surgery, using local anesthesia.

Vietnamese make excellent patients. They are tough, lean and wiry. They have a remarkable stoicism and acceptance of difficulties that seems to protect them to a great extent from primary shock. Local anesthesia works very well for them. The results were excellent, with three exceptions as noted below.

Anesthesia was my chief initial concern. I had planned to use a good bit of spinal. Soon after my arrival, we lost two patients after induction of standard novocaine spinal and, needless to say, ventured it no more. Results with open-drop ether and a simple French made ether breathing apparatus were good, as were those with pentothal and local and regional blocks. These two anesthetic deaths were in patients who were poor risks in retrospect but looked fairly well at the time of surgery; possibly the tilt test would have been valuable here had I known of it at the time. They should not have been given spinals.

The other untoward result was a laparotomy wound infection in a Vietnamese who had somehow managed to acquire more panniculus than the average. The infection responded well to the usual measures. This record of only one infection showed me mainly that Vietnamese have excellent resistance to infection. The aseptic ritual was spotty in many ways; despite DDT, flies were everywhere, there was no running water and instruments, sutures and needles were often in short supply. After several days' rain, there might be no drapes due to the laundry problem. Occasionally, when one would ask for an extra instrument, the nurse would bring it in flaming in alcohol like a crepe suzette.

The supply line there extends to half-way round the world. Considering this, we were well-off. Only two blood transfusions had been given, each donated by a Medico team member, who seemed to make better donors than they did persuaders. Our IV fluids gave out after the first week; homemade ones caused chills, and so patients were given rice water by mouth no matter what their condition was, and they seemed to do well on it. There were no two-way stoppers, so cast-off IV tubing served for simple gastric siphonage when necessary and did very well.

The heat was no worse than we often have at home, except there was no air-conditioning failure to blame.

The lighting consisted of a single two-hundred-watt Mazda bulb set at eye level. This was soon replaced by a standard portable unit, which did well coupled to our generator. It was disconcerting, though, if the engine missed a few strokes, to hear the shouts for a pressure mantel light to be brought into the ether-laden atmosphere. The generator never actually quit, but I had already determined to take my chances with a flashlight if it became necessary.

There was a permanent type stucco operating room building with room for six to ten convalescent patients. Apart from this conditions were primitive, the wards had mud walls, dirt floors, thatch roofs and no windows. There might be two or more to a bed. Patients were often accompanied by their families. Admissions and discharges were rather informal.

While I was there Medico built a fifty bed ward for tuberculosis, the first isolation fa-

cilities available. Its cost was about \$3000 American dollars. Also during my stay a permanent ward for about a hundred patients was put into use, I understand this was financed by the Vietnamese Government primarily.

During the early part of my stay there, we had a three-day visit from Dr. Tom Dooley, wearing an orthopedic brace, brimming with plans and ideas despite his fatal illness.

The Medico story has been well-documented elsewhere; beginning in 1958 it now has activities in both hemispheres and is growing steadily. It is non-religious and non-political, receiving no support except from private sources. It does our nation, and the entire West, an immeasurable amount of good in many critical areas of the world, and now has projects in 12 countries. As a lone example, the annual budget of the hospital I have described was just over 25,000 dollars. The United States has spent in Vietnam alone, since 1954 when the French left, almost two billion dollars, most of it for military purposes.

Travel is broadening. It's nice to get the other man's viewpoint. Vietnamese farm women almost all have coal-black teeth from chewing Betel-nut. I presumed on an acquaintance there to ask him if he really liked this. His reply, "Yes, and pardon my asking, but I notice your American women all have teeth the same color as a dog's. Is this pleasing to you?"

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# The Surgical Management of Volvulus of the Colon

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*Recommendations for treatment of volvulus of the colon are based on experience with thirty-seven cases as well as a study of the literature.*

VOLVULUS of the colon, in the older literature, was thought to be a rare condition associated with a high mortality. Vick,<sup>10</sup> in a series of 6,892 cases of intestinal obstruction, showed that volvulus accounted for 2.6 per cent of the obstructions. It has been well established that volvulus accounts for 30-50 per cent of the intestinal obstructions in the eastern European countries,<sup>1</sup> whereas in the United States<sup>11</sup> carcinoma and diverticulitis are the most frequent causes. Hinshaw<sup>7</sup> reported that volvulus of the colon is exceeded only by carcinoma as the cause of large bowel obstruction. Thirty-seven cases of volvulus of the colon have been treated at the Medical College of Virginia and McGuire Administration Hospitals from 1950 through 1960. (Table 1) Because there appears to be considerable disagreement among various authorities con-

TABLE I  
DIVISION INTO DIFFERENT TYPES OF VOLVULUS

Type of Volvulus	Laurell, Sweden	Bruusgaard, Norway	MCV and McGuire
Cecum	1	7	7
Transverse Colon	3	4	2
Sigmoid Colon	26	91	28
Total	30	102	37

cerning the optimal surgical therapy for volvulus of the colon, it was felt desirable to closely analyze our experience and record our current ideas concerning the treatment of this condition.

## Cecal Volvulus

Donhauser and Atwell,<sup>4</sup> in 1949, extensively reviewed the etiology of cecal volvulus. Failure of the right colon to become adherent to the right abdominal wall permits the cecum to become mobile. A mobile cecum is found in approximately ten per cent of the population, but the incidence of cecal volvulus is very low. Parks,<sup>9</sup> in 1957, was able to find only 500 cases in the literature. Pregnancy, the post-operative state, and constipation are predisposing factors.

In this series there were seven cases of cecal volvulus. All patients were female, and ranged in age from 30-80 years. The age distribution is shown in Figure 1. Characteristically, all of these patients had a one-to-three day history of abdominal pain, nausea usually associated with vomiting, and obstipation. Moderate to marked abdominal distention with abdominal tenderness was present. A mass was felt in several cases. A dilated loop of colon was seen in the left upper quadrant on x-ray examination of the abdomen in one case, in the right upper quadrant in two cases, and in the right mid-

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abdomen in the fourth case. No x-rays were obtained pre-operatively in three cases. The results of the treatment are summarized in

stated that there was a 50 per cent mortality associated with cecal volvulus.

Dixon and Meyer,<sup>3</sup> in 1948, reviewed the

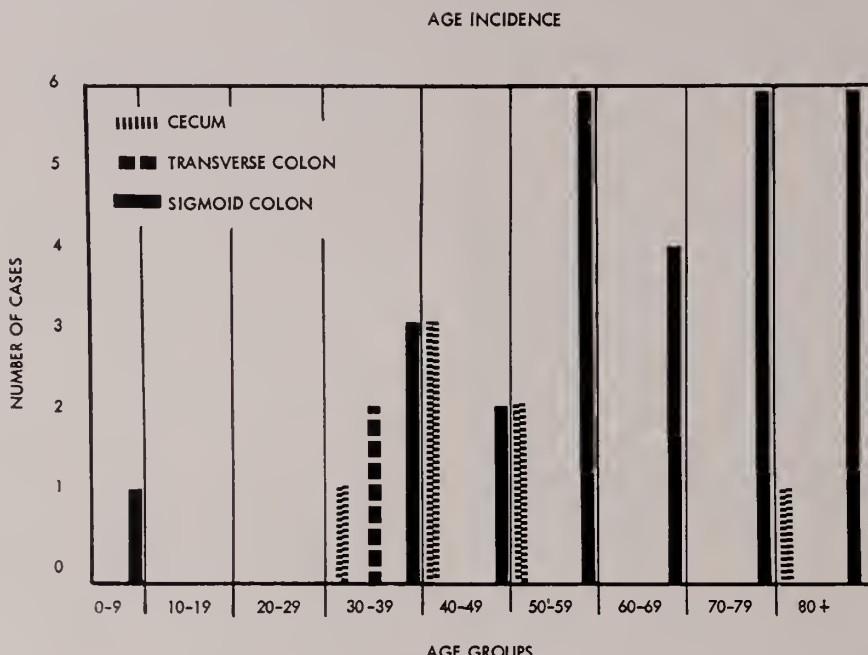


Fig. 1. The age incidence of volvulus of the colon.

Table 2. A laparotomy was performed in all instances. Detorsion alone was performed in three cases, detorsion plus cecostomy in three cases, and in the seventh case gangrenous bowel was treated by exteriorization resection. There were no deaths in this series.

TABLE 2  
RESULTS OF VARIOUS METHODS OF TREATMENT  
IN ACUTE VOLVULUS OF THE CECUM

Type of Treatment	Number of Treatment	Deaths
Laparotomy and Detorsion	3	0
Laparotomy, Detorsion, and Cecostomy	3	0
Laparotomy and Exteriorization Resection	1	0
Total	7	0

The surgical management of volvulus of the cecum remains a controversial point. The operative mortality in cecal volvulus has, in the past, been extremely high. Donhauser and Atwell,<sup>4</sup> in 1949, reviewed 100 cases of which 83 had definite surgery. There was a 40 per cent mortality in the cases reported in their review. Dean,<sup>2</sup> in 1952, summarizing the literature to date,

problem of recurrent volvulus of the cecum. Because of their 25 per cent recurrence rate, they devised a new type of cecopexy. A right gutter peritoneal flap was sutured over the cecum and ascending colon to its mesentery. A theoretical objection is that post-operative distention of the right colon could disrupt the mesenteric suture line. Nelson and Bowers,<sup>8</sup> in 1956, reported another type of cecopexy in which a vertical incision was made in the peritoneum of the right posterior gutter. The cecum was then placed in this raw retro-peritoneal bed, and the lateral peritoneal flap was sutured to the cecum and ascending colon wall. The mesentery was then removed from a small area of the ascending colon, and the medial peritoneal flap was then brought up and sutured to the medial aspect of the ascending colon wall. This method of cecopexy was accomplished in six cases, all with apparently excellent post-operative results. The danger of placing sutures in the wall of a previously markedly distended cecum is real because of the possibility of a fecal fistula.

Because of the potential disadvantages of the above-mentioned cecopexies, we suggest a modified cecopexy in those cases in which no gangrenous bowel is present. A vertical incision is made in the peritoneum of the posterior lateral gutter, a flap of peritoneum is then developed, and the cecum and ascending colon are placed in the raw retroperitoneal bed. The medial flap of the peritoneum is then sutured under the cecum and ascending colon to the posterior portion of the mesentery, as is illustrated in Figures 2 and 3. This modified cecopexy offers the

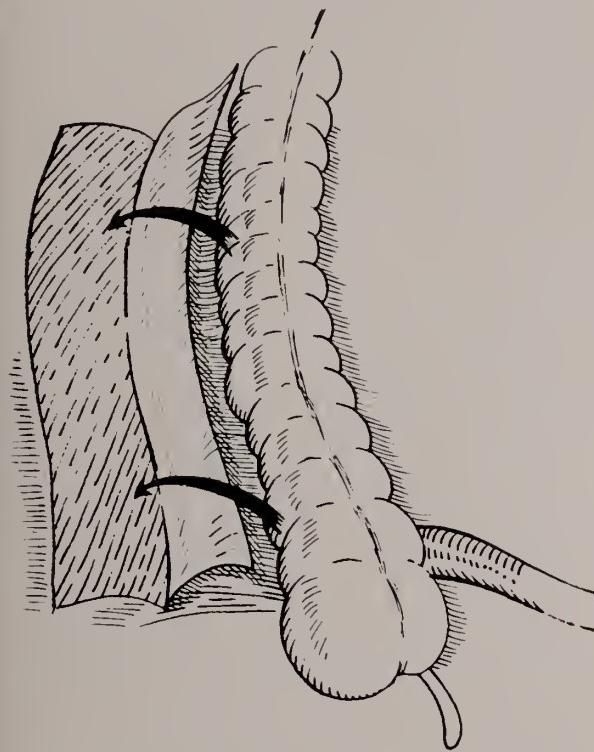


Fig. 2.—Cecopexy. The right posterior parietal peritoneum is incised and the medial flap remains posterior as the right colon is placed in the raw bed.

advantage of preventing small bowel herniation such as had been described following cecostomy. In addition, the cecum and ascending colon are able to distend post-operatively without undue stress on the mesenteric suture line, and no sutures are placed in the cecal or ascending colon wall. If the bowel is gangrenous, it should be resected with either primary anastomosis or exteriorization resection according to the local conditions at the time of the surgery.

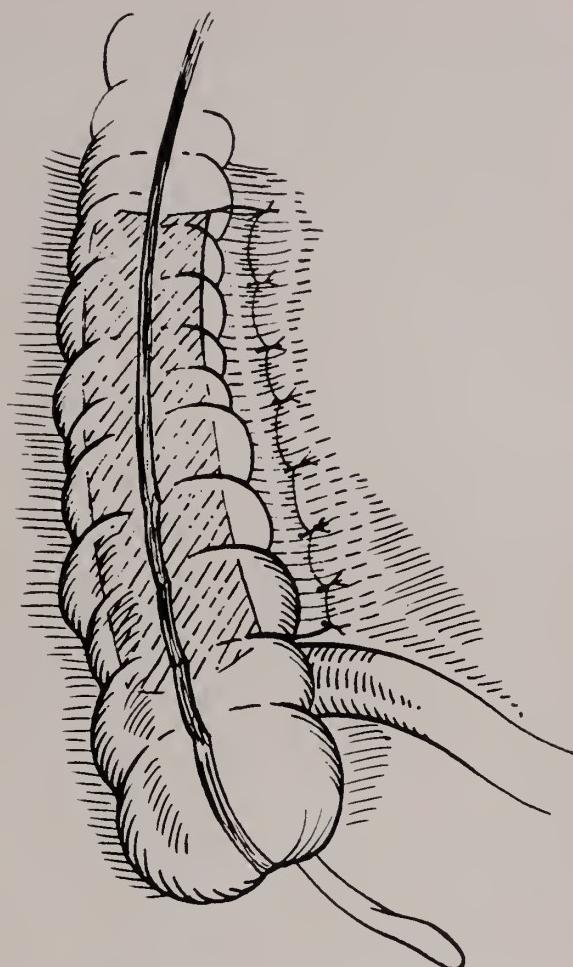


Fig. 3.—Cecopexy (continued). The medial peritoneal flap is sutured under the right colon to its mesentery.

### Transverse Colon Volvulus

Volvulus of the transverse colon is rare. Few authors even refer to the problem and Bruusgaard<sup>1</sup> mentions only ten cases. The colon must be sufficiently redundant in order for torsion to occur. There were two cases in this series.

**Case 1.**—A 38-year-old white male who was three weeks post-operative following removal of a medial meniscus of the knee. He gave a history of being awakened at home 36 hours prior to admission with right upper quadrant cramping pain, nausea with no vomiting, and obstipation. Examination revealed a tender, tympanitic, right upper quadrant mass and hyperactive peristalsis. X-rays of the abdomen showed a markedly distended loop of colon with fluid levels in

the right upper quadrant. At surgery, volvulus of the proximal transverse colon was found. The bowel was twisted counter-clockwise around an adhesive band from the ascending colon to the right lobe of the liver. The band was divided and detorsion of the viable bowel was accomplished easily. His post-operative course was uneventful.

**Case 2.**—A 33-year-old white female, who was 36 hours post-partum when she suddenly developed colicky abdominal pain, nausea, and obstipation. Generalized abdominal distention and tenderness were present. X-rays of the abdomen showed distention of the loop of large bowel in the mid-abdomen and moderate small bowel gas, suggestive of cecal or transverse colon volvulus. At the time of surgery, a redundant transverse colon with a 180 degree torsion was found. Detorsion was performed, and the patient's post-operative course was uneventful.

Table 3 summarizes the operative results.

TABLE 3

RESULTS OF VARIOUS METHODS OF TREATMENT IN ACUTE VOLVULUS OF THE TRANSVERSE COLON

Type of Treatment	Number of Treatments	Deaths
Laparotomy and Detorsion	1	0
Laparotomy, Band Cut, Detorsion	1	0
Total	2	0

There were no deaths in this series. This series is too small to justify recommending that patients with viable bowel treated by laparotomy and detorsion require a subsequent elective resection.

### Sigmoid Colon Volvulus

In order for sigmoid volvulus to occur, there must be a long, freely mobile colon and sigmoid mesocolon, and the two limbs of the sigmoid loop must lie close together. Bruusgaard has reviewed the causes of sigmoid volvulus.

In this series, there were 28 patients ranging in age from 9-94 years. Sixteen of the 28 patients were over 60 years of age. (Figure 1)

Twenty-five of the patients gave a history of from 24 hours to seven days of progressive abdominal distention, mid-abdominal or left lower quadrant cramping pain, with or without nausea and vomiting, and obstipation. Seven of the patients reported no nau-

TABLE 4  
RESULTS OF VARIOUS METHODS OF TREATMENT  
IN ACUTE VOLVULUS OF THE SIGMOID

Type of Treatment	Number of Treatments	Deaths
None	1	1
Spontaneous Reduction	1	0
Reduction by Enema	1	0
Reduction by Barium Enema	1	0
Reduction by Proctoscopy and Rectal Tube	19	0
Laparotomy and Retorsion	6	1
Laparotomy, Resection, and Sigmoidostomy	1	0
Laparotomy and Resection	1	0
Laparotomy and Exteriorization Resection	3	1
Total	34	3

sea and vomiting. Early, severe nausea and vomiting was reported in the three cases in which gangrene of the bowel was found. Thus, in this series, this symptom had an ominous sign. Most of the patients gave a history of many years of constipation. Four patients were bedridden from neurological diseases. All of the patients demonstrated moderate to marked abdominal distention. X-rays of the abdomen were performed in all but two cases, and were diagnostic or highly suggestive of volvulus in all but one case. In this non-confirmatory case, laparotomy revealed a gangrenous sigmoid volvulus with associated gangrenous small bowel. The results of the various methods of treatment are summarized in Table 4. The volvulus was reduced by proctoscopy and rectal tube 19 times with no deaths. Laparotomy with detorsion or resection was employed in 11 cases with two deaths. One patient died shortly after admission to the hospital, resulting in a total of three deaths in the series.

**Case 1.**—A 39-year-old colored male who gave a recent history of heavy alcoholic intake. Five hours prior to admission to the

hospital, he developed sudden generalized abdominal pain followed by nausea and vomiting. Shortly thereafter, he took large doses of multiple laxatives. On arrival in the emergency room he was semi-comatose, had no obtainable blood pressure, and the abdomen was markedly distended, rigid, and apparently tender. X-rays of the abdomen showed widely distended loops of small bowel with marked large bowel gas with fluid levels. An obstruction was favored. The patient did not respond to intravenous therapy and he died several hours after admission. Autopsy showed gangrenous small bowel trapped behind a gangrenous sigmoid volvulus.

**Case 2.**—An 80-year-old colored male who gave a history of one week of progressive abdominal distention associated with no bowel movements. On admission, his abdomen was exquisitely tender and extremely tympanic, and left lower quadrant tenderness was present. X-rays of the abdomen were compatible with a sigmoid volvulus. Because of an associated incarcerated inguinal hernia, he had laparotomy and detorsion. The patient was found dead in bed on the eighth post-operative day. No autopsy was obtained and the cause of death was not established.

**Case 3.**—A 73-year-old colored female who was admitted with a history of progressive abdominal distention and anorexia of one week's duration. She had had no bowel movements for four days. The abdomen was greatly distended, tympanic, with generalized tenderness and decreased bowel sounds. X-rays of the abdomen were suggestive of sigmoid volvulus. An obstruction was noted at 15 cm. on proctoscopic examination, and a rectal tube could not be passed through the obstruction. At laparotomy, she was found to have a gangrenous sigmoid volvulus with perforation of the bowel. The perforation was not secondary to the pre-operative rectal tube. An exteriorization resection of the bowel was performed. She died on the seventh post-

operative day from peritonitis and pneumonia.

Table 5 summarizes the results of non-

TABLE 5  
RESULTS OF NONOPERATIVE MANAGEMENT—  
SIGMOID VOLVULUS

Proctoscopy and Rectal Tube	No. of Episodes	Deaths	Mortality (%)
Successful	19	0	0.0
Unsuccessful	4	1	25.0
Nonviable (1)			
Viable (3)			
Total Attempted	23	1	4.3

operative management. Nineteen episodes of volvulus were reduced successfully by proctoscopy and rectal tube with no deaths. Proctoscopy and rectal tube was unsuccessful in reduction of the volvulus in four patients. The one death was Case 3. The other three patients were treated by reduction by barium enema, by laparotomy and detorsion with later elective resection, and by laparotomy and detorsion.

The results of the operative management are summarized in Table 6. Five patients

TABLE 6  
RESULTS OF OPERATIVE MANAGEMENT—  
SIGMOID VOLVULUS

Treatment	No. of Patients	Deaths	Mortality %
Primary Resection	5	1	20.0
Nonviable (5)			
Viable			
Laparotomy and Detorsion	6	1	16.7
Elective Resection	12	0	0.0
Total	23	2	8.7

were treated by primary resection with one death. In all instances, the bowel was non-viable. The death in this group was Case 3. Three of the remaining cases with non-viable bowel treated by primary resection were found to have associated gangrenous ileum wrapped around a gangrenous sigmoid volvulus. All three of these cases had been symptomatic for less than 12 hours, and nausea and vomiting had been pronounced. The fifth case with primary resection had gangrene of the volvulus with no other findings. Six patients were treated by laparotomy

and detorsion with one death. The death was Case 2. Twelve patients had an elective resection with no deaths.

Bruusgaard,<sup>1</sup> in 1947, focused initial attention on the use of proctoscopy and rectal tube in the treatment of patients with sigmoid volvulus. Prior to that time the accepted treatment was laparotomy with detorsion or resection, but this method was associated with a mortality of 30-50 per cent.<sup>5,6</sup> We agree with the current opinion<sup>5</sup> that patients with a history and physical and x-ray findings of sigmoid volvulus can safely be treated by proctoscopic technique. Further, because of the high recurrence rate, these patients should have elective resection within seven to ten days following proctoscopic detorsion. There will be a small group of poor operative risk patients who can best be managed by a repeat proctoscopy and rectal tube should they develop a recurrent episode. If proctoscopy is unsuccessful, or if there is evidence of gangrenous bowel, then immediate laparotomy with detorsion or resection is indicated in all cases.

Bruusgaard further stressed the point that volvulus of the sigmoid colon, not treated by resection, may frequently recur. Ninety-one patients were treated for 168 episodes of volvulus in his series. Drapanas and Stewart's series<sup>5</sup> showed 40 patients with 116 episodes of volvulus. Our series (Table 7)

TABLE 7

ANALYSIS OF EPISODES OF SIGMOID VOLVULUS

Episodes of Sigmoid Volvulus	No. of Patients
1	22
2	6
Total	28

shows that 28 patients had 34 episodes. These data give further supportive evidence to the advisability of elective resection in patients whose sigmoid volvulus has been previously reduced by proctoscopic detorsion.

### Conclusions

1. The surgical management of volvulus of the colon has been reviewed.
2. Cecal volvulus requires immediate

laparotomy plus definitive surgery. A modified cecopexy is proposed.

3. Transverse colon volvulus requires immediate laparotomy and detorsion of viable bowel and resection, with or without exteriorization, of nonviable bowel. There is no evidence to suggest that patients with viable bowel treated by laparotomy and detorsion need a subsequent elective resection.

4. Sigmoid volvulus is best treated by proctoscopy and rectal tube plus subsequent elective resection. Laparotomy is advised if proctoscopy and rectal tube is unsuccessful or if gangrenous bowel is suspected.

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# Occlusive Vascular Disease

## Treatment and Prognosis

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***Surgery has a prominent place in the treatment of obstructive peripheral vascular disease. Seventy-five cases are analyzed.***

THE MAJOR ADVANCES in the treatment of obstructive peripheral vascular disease have come during the past 10-year period and have been achieved largely through the development of vascular clamps, prosthetic grafts of Teflon or Dacron and the courage and patience of University surgeons who have solved the many difficult problems dealing with this condition.

A major achievement has been the standardization of diagnostic techniques such as aortography or arteriography, and the development of methods of endarterectomy or by-pass grafting to re-establish continuity with the circulation above and below the blockage. There still exist many exponents of the use of by-pass grafts in lieu of endarterectomy for the lower extremity obstructions or by the use of an inverted vein instead of a plastic grafting material, etc. However, these technical arguments are of little consequence since the end result usually is the same—that is the removal of or by-pass around the obstructing segment of artery.

It would seem that there are now definite standards of technique for obstruction in the various regions of the aorta starting below the renal and extending into the iliac, femoral and popliteal vessels. There are,

likewise, definite contra-indications for surgery essentially consisting of extensive vascular disease without segmental obstruction.

This paper presents an experience with 75 cases of occlusive vascular disease, either of the distal aorta, iliac, femoral or popliteal vessels and also several special situations involving aneurysms of the aorta with obstructive disease below the aneurysm requiring repair prior to the aneurysm resection.

The accompanying charts indicate the numerical distribution of cases:

	No. of cases
Aortic iliac segmental occlusion	10
Iliac artery segmental occlusion	28
Ilio-femoral artery segmental occlusion	24
Femoral-popliteal segmental occlusion	23
Special situations	3

### Methods of Diagnosis

The diagnosis of obstructive vascular disease depends essentially upon the symptoms of claudication and the examination revealing an absence of or diminution in pulses below the obstructed vessel. Further examination depends upon aortography or arteriography to determine the level of the obstruction and the adequacy or run-off below the obstruction.

For a patient with poor femoral pulses bilaterally, one would consider an aortic-iliac obstruction as the offending lesion—the so-called Leriche syndrome. In this case, aortography should be performed demonstrating the level of the obstruction and the adequacy of the iliac or femoral vessels below the obstruction. If an inadequate femoral run-off occurs, then endarterectomy in the aorta and iliac vessels would be of no avail since more peripheral obstruction exists and would cause thrombosis in the endar-

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terectomy site. If a weak femoral pulse exists on one side and a strong femoral pulse on the other, then one would consider unilateral common iliac or femoral blockage and again aortography would demonstrate the level of the lesion and the adequacy of the femoral vessel below the obstructed segment.

Good femorals bilaterally, but an absent popliteal or pedal pulse on one side, would indicate an obstruction in the femoral canal



Fig. 1. Normal aortogram demonstrating good filling of inferior mesenteric, iliac, and common femoral vessels. No obstruction. Note the smooth appearance of the walls of the vessels.

—Hunter's canal and a femoral arteriogram here would seem indicated to demonstrate the level of the obstruction and the presence or absence of collateral filling in the popliteal vessel. If the popliteal vessel cannot be demonstrated to fill and adequate run-off in this structure shown, then one must assume that the obstructing element in the Hunter's canal extends into the popliteal, anterior and posterior tibial vessels, contraindicating an attempt at endarterectomy or by-pass graft. However, if there is a seg-

mental obstruction in the upper popliteal and lower femoral vessel, then an endarterectomy or by-pass graft should be considered depending upon the length of the obstructed segment. As will be mentioned later, a concomitant lumbar sympathectomy should be done to avoid prolonged arteriospasm and to provide better skin nutrition following these procedures.

A diffuse obstruction will be demonstrated by an arteriogram and suggests that such a patient should not be subjected to an exploratory vascular operation—good filling of the vessel below the obstruction, be it iliac, femoral or popliteal, must, therefore, be demonstrated before direct arterial surgery is advised.

The accompanying aortograms and arteriograms demonstrate segmental occlusion in vessels observed and graphically demonstrate how a complete obstruction in a vessel may still not cause gangrene in the part below this area. Collateral circulation develops slowly over a period of years, and with the final obstructing thrombotic episode an adequate collateral is frequently present to allow maintenance of muscle and skin nutrition. Severe claudication may be the only symptom and this should be carefully evaluated clinically.

### Indications for Surgery

The treatment by surgery of a patient with obstructive vascular disease without symptoms seems incorrect. The absence of a femoral, popliteal, or pedal pulse in itself is not an indication for arterial surgery or even for further diagnostic tests. There are many elderly people who have absent pulses, but who are able to maintain jobs or to enjoy their leisure and certainly these people are not candidates for surgery.

### Reconstructive Vascular Procedures

It would seem logical to assess the patient with vascular disease in the light of his symptoms. A symptomatic patient, that is one with claudications, who finds it difficult

to enjoy his leisure time or to carry on his work, certainly should be considered as a candidate for further investigation. This especially applies to the younger age group, that is in the 4th, 5th, and early 6th decade, since these people frequently enjoy such sports as hunting, hiking, golf, etc., which they otherwise cannot do with their claudication attacks. Therefore, a symptomatic patient whose general medical health seems acceptable should be advised to have arteriography study to demonstrate the level and extent of the lesion and the adequacy of the vessel below. It is then possible to



Fig. 2. Aortogram showing a complete segmental obstruction in the left common iliac artery—see arrow. Such a patient, with adequate run-off below the obstruction, is a good candidate for endarterectomy.

advise wisely the type of surgery to be performed.

As previously mentioned, if a segmental occlusion exists with adequate run-off and filling of the vessel below the occlusion, then a prognosis of good recovery can be given and surgery freely advised. However, if extensive obstructing vascular disease is present and an inadequate run-off demonstrated, then direct vascular surgery is

contra-indicated and lumbar sympathectomy may be the treatment of choice. The use of agents such as Priscoline and 3,5,5-Trimethylcyclohexylmandelate (cyclosparinol), anticoagulation, or the use of drugs to lower blood saturated fatty acids (Mer/29 etc.) may all be considered as adjunctive therapy. These agents in no way substitute for removal of an obstructing vascular plug. A patient may benefit significantly from surgery where segmental occlusions exist, and to delay may mean extension of thrombus and the loss of an opportunity to provide major relief.



Fig. 3. Aortogram showing complete obstruction of left common iliac artery. Note also the rough appearance of the distal aorta and right iliac demonstrating thick atheromatous plaques.

### Evaluation of Outflow Tract

At the present time, the standard method of evaluation of the outflow vascular tract or run-off pattern below the segment of obstruction is performed by means of arteriography or aortography demonstrating a patent vessel below this level. One assumes, therefore, that if there is a segmental obstruction with an adequate flow of blood

below the obstruction, blood will flow adequately into the region beyond the lesion if endarterectomy or by-pass is performed. This hypothesis in general is true, but there are circumstances in which the main vessel below the obstruction is patent and yet there exists rather marked arteriolar resistance preventing adequate flow. This situation is difficult to evaluate since flow meters are still in the experimental stage. Ideally, the surgeon should evaluate the occlusion by means of aortography, demonstrating a patent vessel below the obstruction and then be able at the time of surgery to calculate



Fig. 4. Aortogram with plate under both thighs—demonstrates segmental occlusion on the left and right with good collateral filling of popliteal vessels. A good candidate for by-pass graft or endarterectomy.

by means of a flow meter the flow of blood into the extremity through the by-pass or endarterectomized vessel. If the flow rate is adequate, then a prognosis for recovery is excellent. However, if the flow meter demonstrates a poor peripheral run-off, then one could postulate the development of a thrombus in the by-passed graft or possibly in the endarterectomy site. This situation is mentioned since there are those individuals in whom rather marked peripheral resistance exists—especially advanced diabetes mellitus

and some neurovascular disorders. The development of an adequate, simple flow meter will significantly help to prognosticate the outcome of vascular surgery in these patients.

### Technique of Surgery

The technique of performing an endarterectomy or a by-pass graft has been described in great detail previously by many authors and the references are given for those interested. Essentially, in its simplest form, the endarterectomy consists of a small longitudinal incision in the blood vessel and the development of a plane between the



Fig. 5. Left femoral arteriogram demonstrating segmental occlusion of femoral artery in Hunter's canal with good popliteal vessel below. Endarterectomy done here.

atheroscleromatous plaque and the vessel wall. The plug of degenerative, fatty material is then removed, as much in one piece as possible, until it is felt that the vessel is pliable, soft, and that there are no further obstructing elements above or below the site of endarterectomy. Several small incisions may be necessary in a vessel to obtain this result.

The by-passed graft is performed usually for lesions in Hunter's canal which are fairly extensive. This means obstructive lesions beginning at the level of the profunda femoris and extending down into the upper portion of the popliteal artery. Such an extensive obstruction does not lend itself

and a graft is performed between the femoral and the popliteal artery passing the Teflon tube graft through a subcutaneous tunnel. A concomitant lumbar sympathectomy is performed for reasons given above.

Teflon is used extensively by this author since it is easy to work with technically and

## AORTIC-ILIAC SEGMENTAL OCCLUSION (10 CASES)

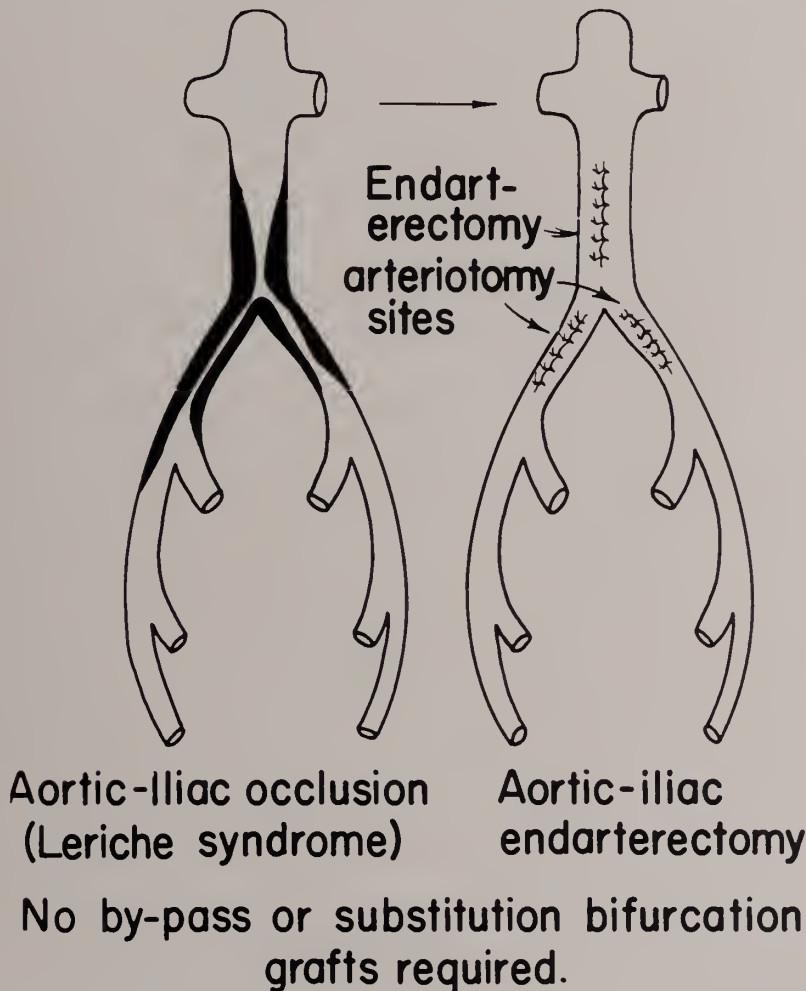


Fig. 6

well to endarterectomy and in these situations a by-pass graft of Teflon is used. This technique consists of a small inguinal and popliteal incision, exposing the popliteal artery and the femoral vessel. The popliteal artery is then opened through a small longitudinal incision and if adequate retrograde flow occurs, the vessel is heparinized distally

there is no bleeding through the interstices following the removal of the vascular clamps. The Dacron prosthesis also is technically easy to work with but there is considerable bleeding through the small interstices requiring frequent re-application of the vascular clamp until clotting occurs.

Emphasis is made to heparinize the vessel

above and below the vascular clamps and at frequent intervals during the procedure in order to avoid the complication of clot formation. A Heparin solution consisting of 5 cc. of Heparin and 45 cc. of saline is used,

It is felt that one should lean on the side of excessive regional heparinization in order to avoid the troubles of thrombus formation since it is so simple to reverse this effect when desired.

#### ILIO-FEMORAL ARTERY SEGMENTAL OCCLUSION (14 CASES)

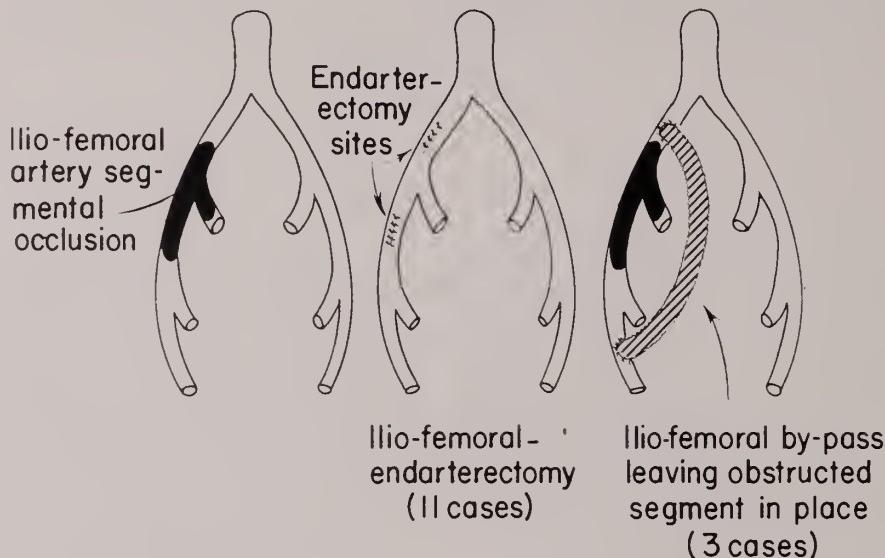
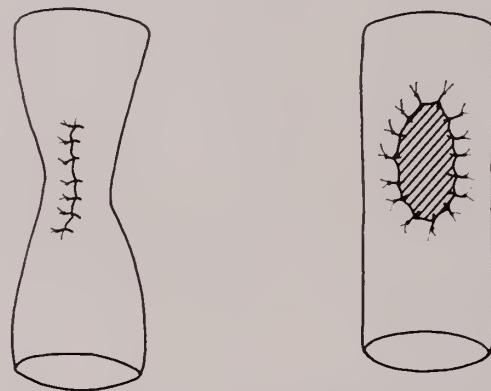


Fig. 7



Narrowed segment following arteriotomy and endarterectomy

"Patch" graft of Teflon or Dacron used to avoid vessel narrowing after arteriotomy. Not usually necessary.

Fig. 8

and if excessive heparinization is performed, then this can be counteracted with the use of intravenous Protamine.

#### Summary

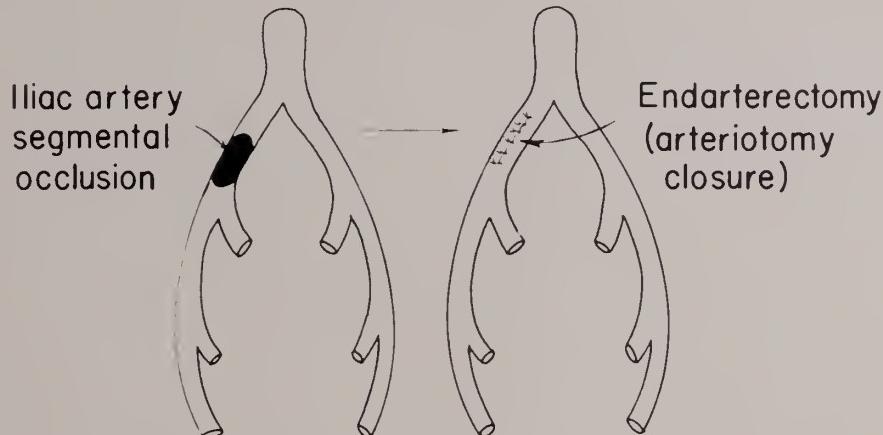
1. Seventy-five cases of occlusive vascular disease treated surgically are presented with

diagrammatic representation of the lesion involved.

2. Indications for surgery are limited to

those patients with significant symptoms—that is prevention of enjoyable leisure or maintenance of job activity. Direct vascular

## ILIAC ARTERY SEGMENTAL OCCLUSION (28 CASES)



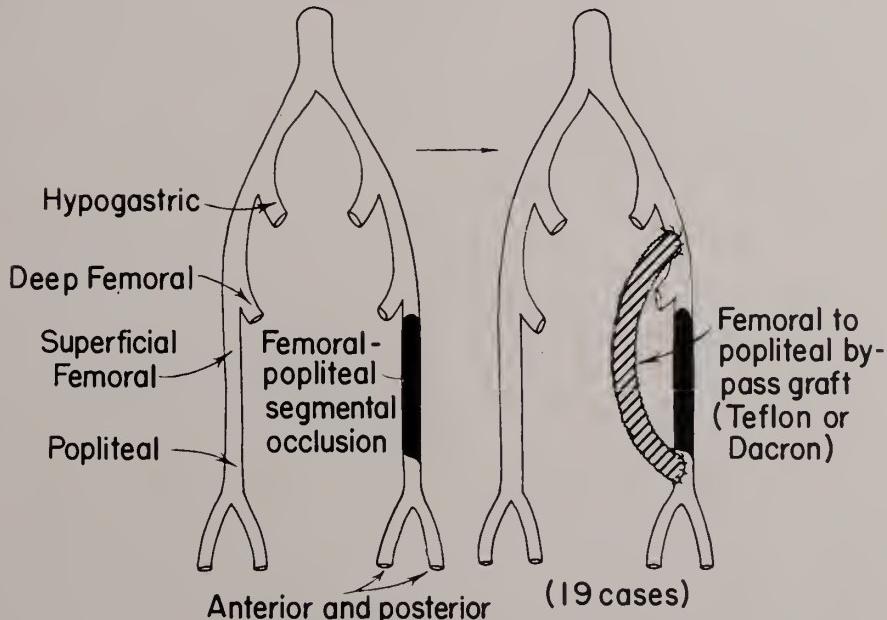
Common iliac artery—segmental occlusion treated  
by endarterectomy

28 Cases

(19 cases-unilateral    9 cases - bilateral)

Fig. 9

## FEMORAL-POPLITEAL ARTERY SEGMENTAL OCCLUSION



19 cases - Femoral to popliteal by-pass graft  
4 cases - Femoral-popliteal endarterectomy

Fig. 10

surgery does not seem indicated in those patients whose symptoms are minimal, regardless of the absence of pulsations.

3. The methods of diagnosis are mentioned consisting essentially of correct palpation of pulses, evaluation of symptoms, and the use of arteriography or aortography to demonstrate the level of the obstruction.

4. Of great importance is the demonstration of adequate run-off or vessel potency below the level of obstruction.

5. A brief description of the technique of endarterectomy or by-pass graft is given.

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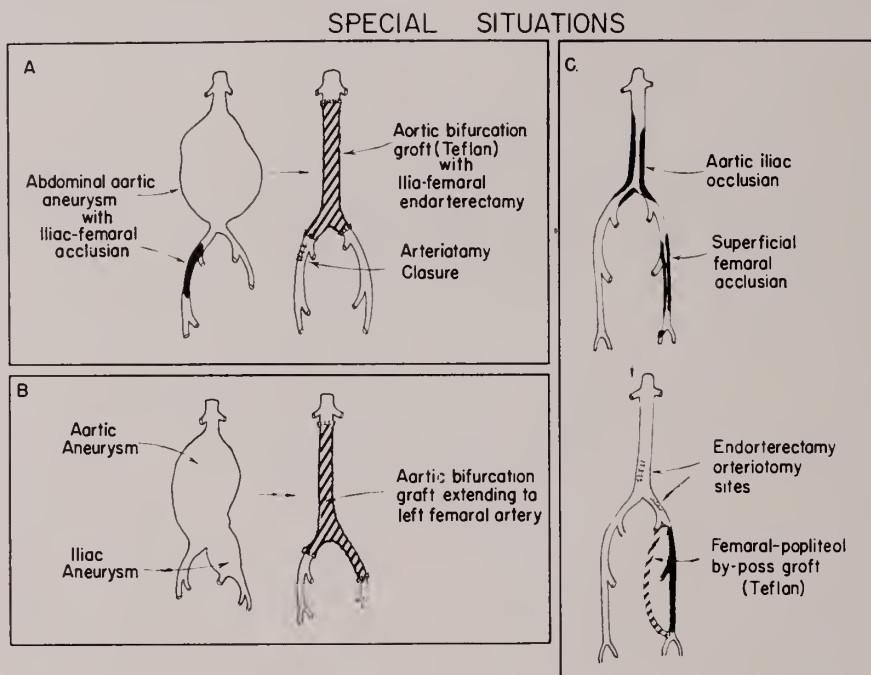


Fig. 11

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# Subcutaneous Pre-Colostomy

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*An operation is described which relieves the symptoms of obstruction in inoperable carcinoma of the rectum or sigmoid.*

IN THE LAST DECADE, new surgical achievements have been made in the treatment of advanced carcinoma of the distal colon and rectum. Much of the success of these achievements can be attributed to methods of blood vessel replacement,<sup>3</sup> the pelvic exenteration operation,<sup>1</sup> pelvic perfusion procedures,<sup>2</sup> and improved irradiation techniques. In spite of this progress, many malignancies which involve the distal colon or rectum are still unsuitable for resection or local palliation.

The following report is a presentation of an operative procedure which has been found useful in cases of this type, when early obstruction is not anticipated. It may be termed a subcutaneous pre-colostomy. It is a procedure so designed as to afford easy access to the transverse colon when distal obstruction later develops in the course of the patient's disease. It is also designed to give the debilitated cancer patient a short period of hospitalization and a minimum of stress and discomfort when the subcutaneous loop of bowel is opened.

## Clinical Evaluation and Indications

Indications for subcutaneous pre-colostomy can frequently be determined clin-

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ically in the patient's preoperative evaluation period. Patients who have advanced pelvic malignancies which also involve the left colon or rectum, but who have no symptoms of intestinal obstruction, are likely to develop these symptoms before they succumb from the underlying disease process. A similar situation often exists with patients who have advanced intramural malignancies of the left colon or rectum without symptoms of obstruction preoperatively. Patients with known distant metastases from primary sites in the left colon or rectum, but who have no obstructive symptoms, may also be considered for subcutaneous pre-colostomy.

At operation, additional indications may be more easily recognized. In one case included in this report, the position of a tumor implant indicated probable later fistula formation between a loop of small bowel and the ascending colon. The subcutaneous pre-colostomy was placed distal to this point in order that it could be opened later if the fistula developed and produced continuous diarrhea from the anal route. This complication did develop in the course of the patient's disease and the fistula was well demonstrated by barium roentgenograms. However, the patient died during the night before the scheduled operation to open the pre-colostomy.

## Operative Technique

The subcutaneous pre-colostomy is placed in the superior portion of the vertical laparotomy incision. A 10 cm. segment of the midtransverse colon is elevated out of the peritoneal cavity and the middle colic artery with its three branches in the mesocolon is identified. (Fig. 1) The attached omentum is resected from this segment of bowel wall.

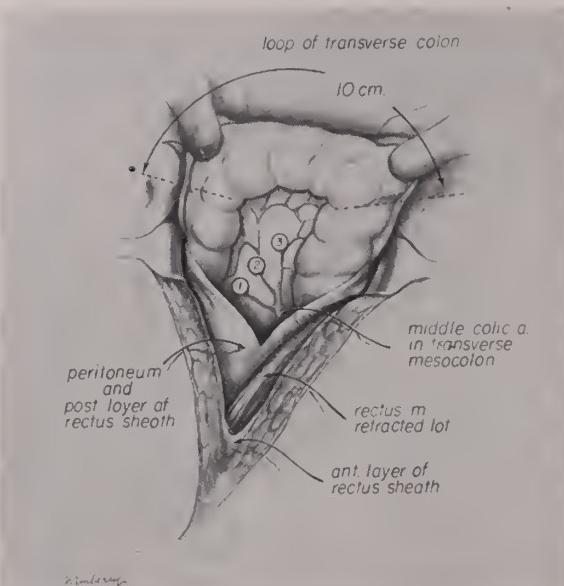


Fig. 1. Elevation of 10 cm. segment of transverse colon in the superior portion of vertical laparotomy incision. Note middle colic artery and its three branches.

Multiple interrupted sutures of No. 3-0 chromic catgut are used to secure the loop of bowel to the peritoneal edges and to the fascia of the anterior sheath of the rectus muscle. (Fig. 2) The subcutaneous tissue

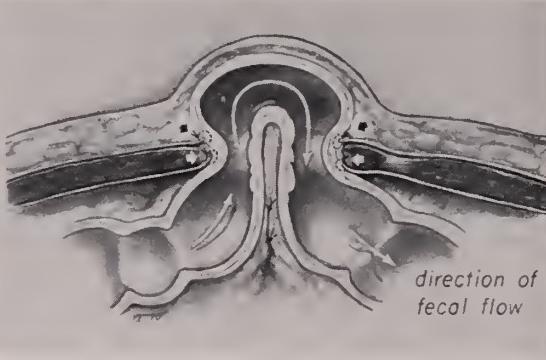


Fig. 2. Cross-sectional view of subcutaneous pre-colostomy. Note placement of sutures.

surrounding the loop of bowel is well undermined. The skin is then closed over the loop of bowel without tension. (Fig. 3)

If it becomes necessary to open the loop because of distal obstruction during the course of the patient's disease, it can be accomplished quickly and easily. Employing local anesthesia only, a teardrop shaped incision is made through the skin, and into the lumen of the bowel, proceeding from right to left. (Fig. 4) A colostomy bag

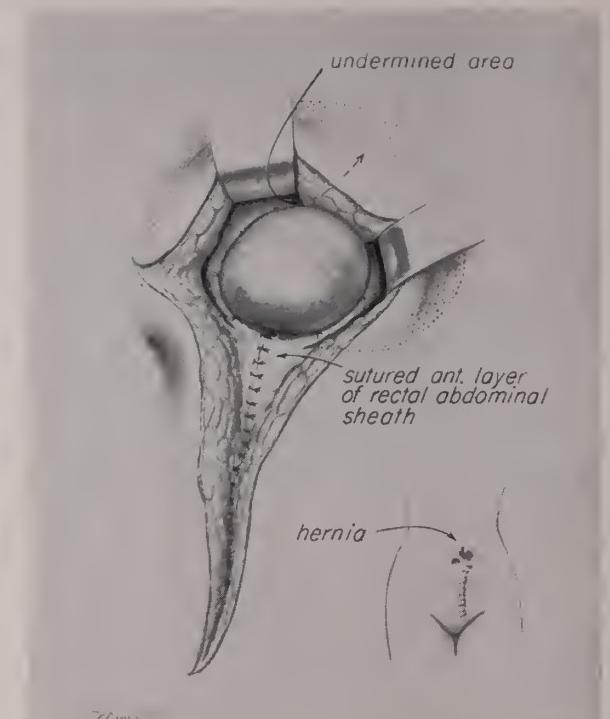


Fig. 3. View of subcutaneous pre-colostomy from above. Note undermined area. Inset: skin closed over the loop of colon.



Fig. 4. Local anesthesia used to open colostomy. Note tear drop type excision of all layers.

thereafter, may be worn over the open stoma if desired.

## Results

Experience with subcutaneous pre-colostomy as described herein has been limited to four patients. It has proved entirely satisfactory in each. The subcutaneously placed

loop of colon functioned well throughout the course of each patient's illness. There was no increase in size of the ventral hernias that were constructed. Two of the patients were completely unaware of the presence of the subcutaneous bowel until it was opened. Both of these patients developed distal intestinal obstruction at six and eight months respectively following their original laparotomies and formation of the pre-colostomies. After the bowel was opened, the stomas functioned well until the patients succumbed to their disease. The third patient was followed for a period of four months after the formation of the subcutaneous loop and was then lost to follow-up. The fourth patient was followed for 15 months with the subcutaneous pre-colostomy intact. At the time of death, post-mortem examination confirmed the presence of a fistula between the jejunum and the ascending colon and also revealed that the rectal lumen had narrowed to the approximate size of a pencil.

### Discussion

Dr. Harvey B. Stone<sup>4</sup> described a very similar operation in 1933, and he is the originator of the principle of pre-colostomy. His operation consisted of exteriorizing a loop of sigmoid colon through a separate left McBurney type incision. The serosal surface of the exposed loop of bowel eventually epithelialized and thereafter required no dressing. He reported twenty operations using this method with satisfactory results.

The Stone type operation was attempted in the first case of this series. However, it was impossible to elevate the loop of sigmoid to the abdominal wall because of reaction from adjacent tumor in the mesocolon. The transverse colon was therefore utilized and was placed into the subcutaneous tissue rather than exteriorized.

There may be several advantages in using

the transverse colon for the pre-colostomy. First, it is usually easy to mobilize because of its location far from the site of tumor in the pelvis or distal colon. Secondly, the chance of fecal impaction or malfunction of a transverse colon loop is probably less likely to develop than in the sigmoid colon because of the softer type stool found in the former.

The advantages of placing the pre-colostomy into the subcutaneous tissues rather than exteriorizing it, appear to be as follows:

- (a.) Patients are often unaware of its presence.
- (b.) No dressings are required after the original laparotomy incision has healed.
- (c.) For psychological reasons to the cancer patient, it may be better to have the loop of bowel unexposed.

### Summary

Many malignancies which involve the distal colon or rectum are still unsuitable for resection or local palliation. If early obstruction is not anticipated, the principle of pre-colostomy as described has many advantages. A report of an operative procedure, termed a subcutaneous pre-colostomy, is presented.

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# Non-Penetrating Upper Abdominal Trauma in Children

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*For a number of reasons, it may be difficult to decide whether surgery or conservative treatment is indicated following non-penetrating upper abdominal trauma in children. Some of the factors are considered here.*

ONE OF THE MOST DIFFICULT CONDITIONS which faces practicing physicians and surgeons is that brought on by blunt trauma to the upper abdomen in teenagers and children of the pediatric age group. Although the etiology is usually obvious, the exact force of a blow and its direction are not usually clear. The early manifestations are also somewhat obscured by the fact that children tend to withhold information relative to trauma of this nature since frequently it occurs when they are doing something they shouldn't have been doing. If the exact nature of the blow is known, the child may still minimize his symptoms and in the excitement of being hurt and then being hovered over by concerned, questioning parents and doctors, evaluation by examination is extremely difficult. The family physician or pediatrician is frequently faced with this very difficult problem and often the surgeon is called in consultation. Trauma to the abdomen is a common occurrence in children from in-

fancy to adolescence and it seems amazing that more serious injuries do not occur.

Non-penetrating upper abdominal trauma in children requiring surgery is, however, relatively rare. Ruptured spleen is probably the leading condition, but even this is relatively rare. Abdominal trauma is present in less than 1% of all types of injury leading to hospital admission in large hospital series. Most of these are a result of automobile accidents. The method of trauma may be of several varieties. First, there may be a direct blow or squeezing of a viscus between the external force and the spine. Second, a tangential blow may move a viscus beyond its limits of mobility, thereby tearing its wall or its mesentery. Third, a hollow viscus may be distended and may burst on pressure from without. Fourth, fragments of bone may be pushed into a viscus causing its rupture.

The diagnosis is very difficult to determine accurately in children, but it is very important to make an early decision as to whether operation is immediately necessary. In most cases the decision has to be made within the first six hours, for, if not, the consequences may be longer morbidity with many complications, and even death may occur. As in the making of less pressing diagnoses, an accurate history, a careful complete physical examination, necessary emergency laboratory studies such as blood counts, urinalysis, serum amylase determination, and x-rays, are of greatest value in making a decision. In any cases of trauma, shock may be impending and the patient has to be closely observed while a diagnosis of internal injury is being considered. In multiple injuries, the patient may have obvious

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fractures necessitating a long period of time in the x-ray department. During this time-consuming necessity the patient should be watched closely for changes in the general condition and if shock becomes apparent, this should be treated and the x-rays and movement of the patient delayed. Since immediate examination of the child who has received a blow to the upper abdomen may not reveal the severity of the internal injury, repeated examinations over the next several hours may be necessary in order to note the changes which will lead to the correct diagnosis.

The following brief case presentations will indicate some of the interesting injuries occurring in children who have received non-penetrating trauma to the upper abdomen. These cases represent injuries to the pancreas, spleen, jejunum, and the duodenum. These injuries were all from blunt trauma to the upper abdomen in children and each case is fortunately relatively rare.

The first case is that of a 3½-year-old white boy who was well until two weeks before admission to Stuart Circle Hospital when he developed daily vomiting episodes and had a fever. He was hospitalized in Florida for two days and treated for pneumonia and was later brought to Richmond. He continued to vomit and on arrival in Richmond was seen by a pediatrician who found a large upper abdominal mass and admitted the child on June 27, 1959, for study and hydration. At first there was no history of trauma and the diagnosis of this smooth, firm, slightly irregular mass filling the epigastrium and extending more to the left, was considered to be a neuroblastoma, Wilms' tumor or some type of retroperitoneal mass. Flat abdomen x-ray revealed the bowel to be displaced inferiorly. An intravenous pyelogram revealed normal kidneys and the radiologist suggested possibility of a cyst of the pancreas. A G.I. series was planned but because of some enlargement of the mass this was not done and operation was performed on the third hospital day. At operation a large pseudocyst of the pan-

creas was found and evacuated, and internal drainage was carried out and a cysto-jejunostomy performed with a Roux-en-Y anastomosis. The child did very well, was discharged on the ninth post-operative day. Follow-up has revealed no mass and the child is doing well now two years since operation. After much questioning before and after the operation the child finally admitted that he had been struck in the upper abdomen by a swing just before he had developed the vomiting in Florida.

The second case is that of a 12-year-old white girl who was admitted to the Medical College of Virginia Hospital June 6, 1957, four hours after she had been struck by a truck and thrown 18 feet into the street. On admission she was found to have a blood pressure of 120/60 with a pulse of 120. There were abrasions over the left elbow and both legs. The abdomen was obese and generally tender with some rebound tenderness referred to the left upper quadrant. X-rays of the chest and ribs, pelvis and hips, and left elbow revealed no fractures, and a lateral decubitus x-ray of the abdomen revealed no free air. The hemoglobin was 11.8 grams and the WBC was 30,700. It was felt that a ruptured spleen was likely. This was found at operation and splenectomy performed. About 1,000 cc. of blood was evacuated from the abdomen and a like amount transfused. The child did well and was discharged on the ninth hospital day. Convalescence was uneventful.

The third case is that of a 9-year-old colored boy who ran into the right front fender of a passing automobile and was struck in the mid-abdomen. He was brought to St. Philip Hospital where he complained of generalized abdominal pain and later vomited 200 cc. of bloody material. On examination the blood pressure was 135/75, there were abrasions over the epigastrium and left lower anterior chest. The abdomen was generally tender and no peristalsis was heard. C.B.C. and urinalysis were normal. A lateral decubitus x-ray of the abdomen and a flat chest x-ray were negative. After a Levin

tube was inserted the child was soon taken to the operating room and exploration carried out through a left upper paramedian incision since ruptured spleen seemed a likely diagnosis. At operation there was a large amount of turbid slightly bloody fluid present free in the peritoneal cavity and a 3 cm. longitudinal laceration was found in the jejunum just distal to the ligament of Treitz. This was closed transversely and careful inspection revealed no other significant injury. The child did well postoperatively and was discharged on the eighth hospital day.

The fourth case is one of unusual rarity and interest. This was a 12-year-old white boy who was admitted to Richmond Memorial Hospital on April 16, 1960, with intermittent epigastric pain, nausea and vomiting of four days duration. The child was well prior to this and no definite history of trauma could be obtained initially. On admission the child was markedly dehydrated and had moderate tenderness and guarding in the epigastrium and right upper quadrant. Routine laboratory studies and a serum amylase were not remarkable. Chest x-ray and flat and upright abdominal x-rays were not remarkable. It was felt that the boy did not have an acute surgical abdomen and that he needed hydration. After several liters of I.V. fluids in the first 36 hours the boy improved markedly. However, the intermittent vomiting of bile every 6 or 8 hours prompted the use of gastric suction on the second hospital day and with suction the intermittent epigastric pain was relieved. Various upper abdominal disorders had been entertained for the diagnosis. Cyst of the pancreas, benign tumor of the duodenum, ruptured abnormally located appendix, and

other causes of high small bowel obstruction were considered. On the third hospital day a G.I. series was done via the Levin tube and the diagnosis of intramural hematoma of the duodenum was made by Dr. Savage of the Radiology Department. Still further questioning of the patient revealed that he remembered being struck in the epigastrium by the handlebar of a bicycle two days before the illness, but it didn't hurt and he forgot it. It was felt that the obstruction might relieve itself with further conservative management, but on the sixth hospital day operation was performed and a lemon-sized mass of encapsulated blood clot was evacuated from the lateral wall of the duodenum. Drains were placed down to the site of the hematoma and removed on the third postoperative day. The patient had no further difficulty and was discharged eating ravenously on the seventh postoperative day.

In summary, four cases of epigastric blunt trauma in children have been presented. Each case has presented its own diagnostic challenge. Emergency operation was performed in two, the ruptured jejunum and the ruptured spleen, and semi-elective operation performed in the other two. In each case a single organ injury was found, and it should be emphasized that multiple injuries from non-penetrating trauma are probably more common. Close, careful examination in the operating room is of absolute necessity. However, the initial decision for emergency operation or conservative management is of equal importance for a successful outcome.

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# Endocrine Therapy of Carcinoma of the Female Breast

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*Although not curative, endocrine therapy has a well established place in the treatment of breast carcinoma.*

**M**ANAGEMENT OF ADENOCARCINOMA of the female breast has been of great concern to surgeons for many years. The therapeutic horizon has greatly expanded with recent advances in endocrine therapy. Today not only surgeons but the practicing physicians share the responsibility for treatment in this malignant disease. Endocrine therapy is discussed with the emphasis on the physiological rationale for the types of therapy employed.

The environment in which this neoplasm thrives is of critical importance. The association of estrogen activity with pathogenicity has been studied extensively. The much greater frequency in human females than in males bears out this relationship. That the disease thrives best in laboratory animals in an estrogen-rich environment has been shown by many investigators.<sup>1,2</sup>

Since approximately 50 per cent of cases of mammary carcinoma occur between the ages of 45 and 64, the menopausal and immediate postmenopausal years are of considerable significance. Several facts are most striking in this respect. Five times as many women with breast carcinoma have a late menopause as normal women.<sup>3</sup> Olch<sup>4</sup> found in an analysis of 342 women with carcinoma

of the breast aged fifty years or more 54.7 per cent were still menstruating.

Smith<sup>5</sup> gave the name "cortical stromal hyperplasia" to the changes observed in the ovaries removed from postmenopausal women with carcinoma of the endometrium. These cells were similar to the cells seen in granulosa-cell tumors which produce large amounts of estrogen. The hypothesis that these ovaries secrete large quantities of estrogens has been borne out by measurement and by the demonstration that urinary estrogens are often significantly raised in postmenopausal patients with mammary carcinoma.<sup>6,7</sup>

The ovaries from 100 postmenopausal women with metastatic breast carcinoma were studied by Sommers and Teloh<sup>3</sup> and the changes of cortical stromal hyperplasia were found in 86 per cent, whereas a control group of postmenopausal women without breast carcinoma showed this change in only 37.6 per cent. Smith<sup>8</sup> in a smaller series found cortical stromal hyperplasia in 91 per cent of postmenopausal women whose ovaries were removed before or at the time of primary treatment of their carcinomas.

The mechanism of cortical stromal hyperplasia is not clear, but the theory proposed by Smith<sup>9</sup> is attractive. He feels that this is an attempt of the old ovary to respond to gonadotrophic stimulation. These ovaries contain no follicles and stroma is all that remains to be stimulated. This increase is due not only to increased follicle stimulating hormone (FSH) but also to a raised luteinizing hormone (LH) which may be produced by "unknown factors or the cancers themselves." Support for this is the increased LH production caused by tissue damaging

Presented before the Virginia Surgical Society, Williamsburg, May 20, 1961.

agents.<sup>10</sup> The metabolites of the tumor itself or of protein catabolism might stimulate the pituitary to cause increased LH production and the development of cortical stromal hyperplasia.

In planning endocrine therapy we are more concerned with the biologic type of the tumor than the histologic type. There appear to be three distinct types when we classify them in this manner. The first is the estrogen-stimulated tumor. It has been estimated that approximately 40 per cent of mammary carcinomas in premenopausal and menopausal patients are estrogen stimulated; however, Jessiman and Moore<sup>7</sup> found no patients in this group who had metastatic carcinoma of the breast who did not give some evidence, however slight, of transient worsening when given estrogen for a stilbestrol test. They<sup>7</sup> felt, therefore, that all mammary carcinomas in the premenopausal and menopausal age groups were estrogen stimulated; i.e., "They will grow less well, for a time, with less estrogen."

The second biologic type is the pituitary-stimulated tumor. There is growing evidence that the pituitary gland may produce a mammotrophic hormone which may be the growth hormone. Pearson and Ray<sup>11</sup> gave five patients estrogen after hypophysectomy with no exacerbation in the disease but when growth hormone was administered in two of five patients, there was an exacerbation. From this work and that of others<sup>12</sup> there is evidence that the pituitary is necessary for estrogen stimulation of mammary neoplasm as well as exerting a direct effect on the neoplasm itself. The clinical results of hypophysectomy support the contention for this pituitary-stimulated tumor as a definite biologic type.

The third biologic type is the hormone independent tumor. Certainly in the senile female we have no evidence for the existence of hormone-stimulated tumors. This also applies to certain rapidly growing tumors in any age group which fail to respond to all endocrine therapy even though they may be worsened by estrogens. Since all patients

with reactivated or inoperable metastatic disease\* succumb eventually to their malignancy despite the mode of therapy, one could postulate that most, if not all, are capable of autonomous growth.

In order to determine the biologic type of the tumor as well as the biologic age of the patient and to assess the effects of treatment, various different tests have been employed. Vaginal smears, FSH determinations, calcium balance studies, stilbestrol stimulation tests, estrogen determinations, and others have been utilized but are beyond the scope of this paper. They have been clearly outlined as regards their techniques and uses by others.<sup>7,13</sup>

In the following figures the various endocrine stimuli are depicted as they are thought to act in the untreated and treated cases of mammary carcinoma. The word mammotrophic, is used to designate the pituitary fraction stimulating the neoplasm whether it be growth hormone, prolactin, or some as yet unidentified substance. All these figures represent a neoplasm receiving estrogen stimulation in its original environment whether the patient is premenopausal, menopausal, or postmenopausal.

Figure 1 depicts the carcinoma in this setting receiving stimulation from ovarian and

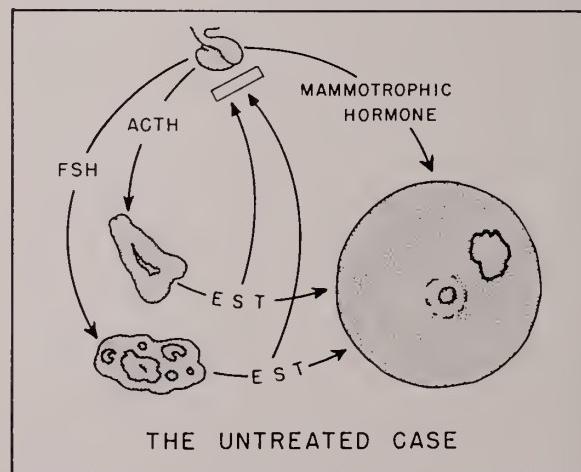


Fig. 1  
From Jessiman, A. J., and Moore, F. D.: Carcinoma of the Breast: The Study and Treatment of the Patient, Boston, Little, Brown and Company, 1956.

\*Inoperable metastatic disease refers to metastatic carcinoma which has spread beyond the surgeon's knife; i.e., supraclavicular nodes, bone, lung, etc.

adrenal estrogen and pituitary mammotrophic hormone. The inhibitory effect of estrogens on the pituitary is represented and should be remembered when estrogen therapy is discussed.

Figure 2 shows the hormonal influence

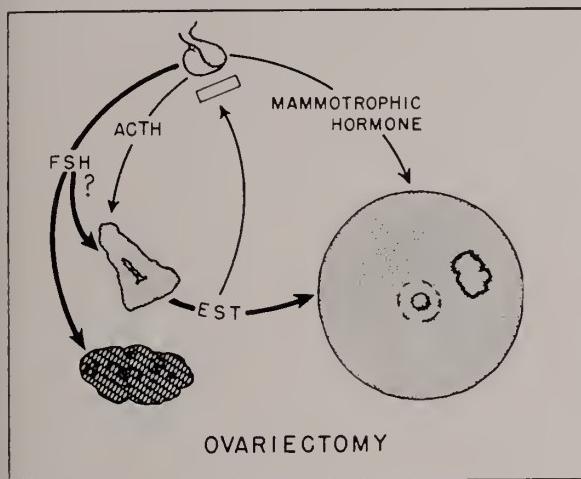


Fig. 2

From Jessiman, A. J., and Moore, F. D.: Carcinoma of the Breast: The Study and Treatment of the Patient, Boston, Little, Brown and Company, 1956.

after the removal of ovarian estrogen. Increased FSH production occurs and adrenal estrogen rises.<sup>6</sup> Prophylactic castration has been advocated.<sup>7,14,15,16,17</sup> On the basis of our present knowledge it would seem to be beneficial and advisable in all patients up to five years postmenopausal who have an operable carcinoma of the breast. It should also be recommended in those cases postmenopausal more than five years who show estrogen activity by one of the appropriate tests, as vaginal smear, FHS determination, or urinary estrogen measurement. Whether or not it should be accompanied by small doses of cortisone, 12.5 mg. twice daily, to suppress the rise in adrenal estrogen as shown by Smith and Emerson<sup>6</sup> is a question still unanswered. Although there is more clinical work appearing to support prophylactic castration in the primary treatment of mammary carcinoma, there is an urgent need for a randomized surgical series of premenopausal and menopausal patients in which half are subjected to castration at the time of radical mastectomy.

Whereas there is still a good deal of argument regarding prophylactic castration, there is almost total agreement as to the efficacy of therapeutic castration in those patients with estrogen activity who have reactivated or inoperable metastatic disease.<sup>7,17</sup> Following bilateral oophorectomy 40 to 50 per cent of this group will get a significant remission. As regards the operative procedure, it is relatively simple and well tolerated by the patient. It can be done with ease at the time of the radical mastectomy. There is no postoperative endocrine care. Estrogen should not be given for hot flashes. There is minimal difficulty with "menopausal changes".

Figure 3 depicts the supposed action of

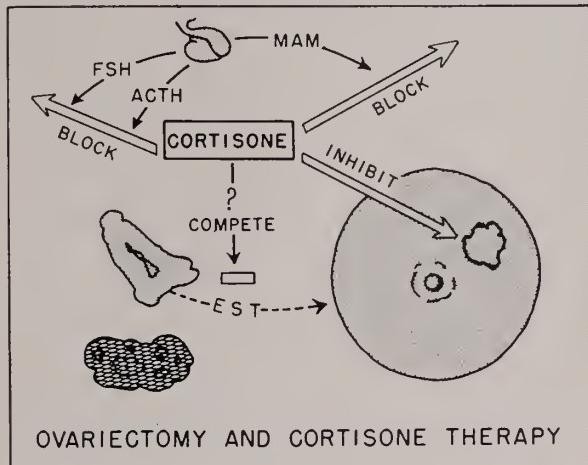


Fig. 3

From Jessiman, A. J., and Moore, F. D.: Carcinoma of the Breast: The Study and Treatment of the Patient, Boston, Little, Brown and Company, 1956.

cortisone on the endocrine stimulation of mammary carcinoma following oophorectomy. As depicted here, cortisone inhibits pituitary activity, blocking ACTH and mammotrophic hormone. In addition it may inhibit the neoplasm itself directly and may compete in the peripheral blood with the remaining estrogen of adrenal origin for active sites on the protein molecule. It has been postulated that cortisone binds more weakly with this protein molecule than estrogens which can only be replaced when cortisone is present in large excess.<sup>18</sup> This has been demonstrated clinically by further re-

missions raising the dose levels of cortisteroid.

The usual dose is 25 mg. daily of cortisone or its equivalent dose of prednisone or similar steroids as maintenance when given to suppress adrenal estrogen in prophylactic castration. In metastatic disease previously treated by bilateral oophorectomy the usual starting dose is 150 to 200 mg. daily, decreasing to 50 to 100 mg. daily, and this level will have to be adjusted according to the response of the particular patient. In terminal cases, doses of 300 to 500 mg. or higher may prove beneficial temporarily.

Prednisone is the corticosteroid of choice for it shows less conversion to androgen and thence possibly to estrogen than corresponding doses of cortisone.<sup>19</sup>

Lemon<sup>20</sup> stresses the use of cortisone to increase the ratio of corticosteroid to estrogen which he feels may be important in the endocrine environment of mammary carcinoma.

The side effects of salt and water retention, changes of Cushing's disease, peptic ulceration and osteoporosis must be watched for.

The results show objective as well as subjective improvement in 40 per cent of patients with metastatic disease.

The administration of cortisone results in an endocrine imbalance quite different from that produced by ablation of either ovaries or adrenals. The term "medical adrenalectomy" is sometimes used to equate cortisone administration with surgical adrenalectomy, but this is a misnomer. With the administration of cortisone both adrenal and pituitary function is inhibited. After adrenalectomy, however, there is an immediate increase in pituitary activity regarding ACTH and possibly mammotrophic hormone. Therefore, one can imagine a patient with a pituitary-stimulated tumor improved on cortisone only to deteriorate following adrenalectomy.

Figure 4 shows the endocrine situation in a female with mammary carcinoma after oophorectomy and adrenalectomy. All estrogen is removed. This relieves the pituitary

of all estrogen inhibition and allows increased production of FSH, ACTH, and mammotrophic hormone.

The problem of selection of patients is important. Criteria for bilateral adrenalectomy as outlined by Block<sup>21</sup> are as follows:

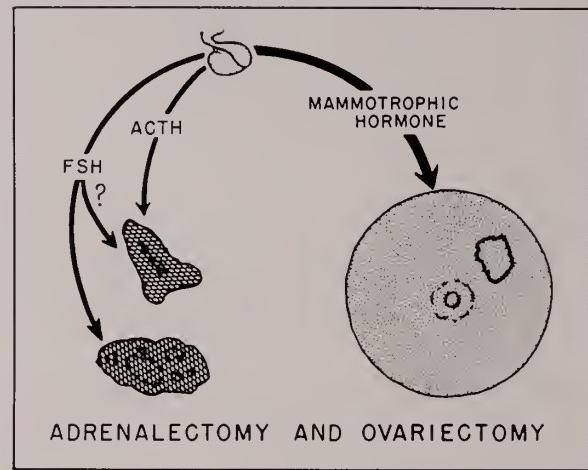


Fig. 4

From Jessiman, A. J., and Moore, F. D.: *Carcinoma of the Breast: The Study and Treatment of the Patient*, Boston, Little, Brown and Company, 1956.

(1) no involvement of liver with metastatic disease, (2) previous remission from oophorectomy, (3) high estrogen excretion, (4) middle age (preferably 50's), and (5) prolonged duration of disease (over three years). All of these criteria are aimed toward palliation in persons who have metastatic disease. There is no sound evidence as yet that prophylactic adrenalectomy has a place in the treatment of mammary carcinoma.

The operation is a major one, requiring the patient to be in optimal condition. Replacement therapy is not difficult, consisting of cortisone in decreasing doses until daily maintenance of 37.5 mg. to 50 mg. is reached. This may be supplemented with 0.1 mg. fluorohydrocortisone daily for salt retaining properties. The patients are warned to increase their cortisone in any time of stress. Objective remission can be expected in approximately 45 per cent of cases.

Bilateral adrenalectomy makes the replacement therapy in patients subsequently undergoing hypophysectomy extremely dif-

ficult. Some investigators<sup>22</sup> feel that following reactivation of metastatic carcinoma after oophorectomy and cortisone therapy adrenalectomy is of little benefit for the tumor has become either autonomous in its growth or is being stimulated by the pituitary.

Figure 5 represents the hormonal situation

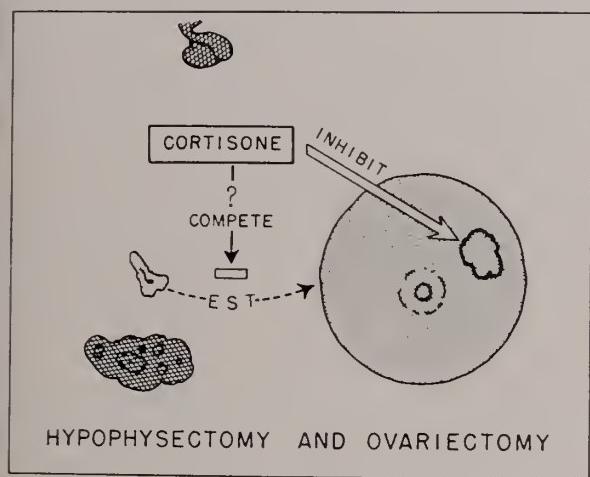


Fig. 5

From Jessiman, A. J., and Moore, F. D.: Carcinoma of the Breast: The Study and Treatment of the Patient, Boston, Little, Brown and Company, 1956.

following oophorectomy and hypophysectomy. All ovarian estrogen and pituitary activity are removed. The adrenal atrophies and activity is minimal. The small doses of cortisone needed as replacement therapy may be inhibitory directly on the neoplasm as well as competing with the small amounts of adrenal estrogen in the peripheral blood.

The problem of selection of suitable patients again arises as it does with other ablative endocrine procedures. Jessiman, Matson, and Moore<sup>23</sup> feel that the most favorable patient is "a woman who is less than ten years postmenopausal, with disease involving the skin, lymph nodes, skeleton or lung but not the brain, liver or viscera generally, who has good cardiac, renal and pulmonary function and who has responded well to castration or had some other evidence of a hormone sensitive tumor."

The replacement therapy is not difficult. Cortisone from 37.5 mg. to 50 mg. daily and U.S.P. thyroid 1 to 2 gr. daily are

necessary. Only about 25 per cent have diabetes insipidus severe enough to require treatment and are usually satisfactorily handled on vasopressin nasal insufflations.

The actual operative procedure is well tolerated by the patient. It requires a skilled neurosurgeon to carry out this surgical ablation successfully.

In respect to the problem of adrenalectomy versus hypophysectomy, Pearson<sup>11</sup> states that, when used to treat metastatic breast carcinoma following a favorable response to oophorectomy, adrenalectomy is successful in giving an objective improvement in 50 per cent and hypophysectomy in 85 per cent of cases. In a report by the Joint Committee on Endocrine Ablative Procedures in Disseminated Mammary Carcinoma<sup>24</sup> large numbers of cases of hypophysectomy and adrenalectomy were studied. Objective regression was rigidly outlined as "a distinct, measurable decrease in one or more dominant metastatic areas by clinical or radiographic examination, without progression of any other metastatic lesions and with no new foci of disease having appeared, for six or more months following the ablative procedure." Objective remission were observed in 31.7 per cent (100/315) of adrenalectomies and 31.3 per cent (112/358) following hypophysectomy. The survival times following surgery were also comparable. Mortality was 9 per cent in both groups and this included all deaths in 30 days from surgery.

It is worthwhile emphasizing that the most predictable good response with either procedure was found in those patients with a previous favorable response to bilateral oophorectomy. Other criteria for selection in these procedures are under study.

Androgens have been employed by many in metastatic disease. The mechanism as to how it works is not known but it has been thought that it might neutralize the effects of endogenous estrogen.<sup>25</sup> Emerson<sup>22</sup> feels that this is a secondary effect and that the primary effect is as an anabolic agent stimulating bone to grow and calcify at a faster

rate than the carcinoma. Androgens become more effective as age increases.

The effective dosage has been established at 50 mg. testosterone propionate three times weekly. At this dosage undesirable side effects of masculinization become troublesome in several months. Also androgen may stimulate tumor growth in a significant number of cases. The incidence is 10 per cent or greater. A possible explanation is the conversion of testosterone to estrogen in significant quantities.<sup>26</sup> Taken as a group, androgen therapy is beneficial in only 20 per cent of cases. In view of the danger of accelerating tumor growth, in addition to the percentage of remissions being lower than with the previously listed modes of therapy, it appears reasonable to withhold androgens until there is a relapse following these ablative procedures and cortisone therapy or when they are refused or cannot be tolerated.

Estrogen therapy would seem to be paradoxical. Although this type of tumor seems to thrive in an estrogen-rich environment, it is possible that estrogens may be of benefit by suppressing pituitary function.

The dose usually necessary for effective therapy is stilbestrol 15 mg. per day by mouth. To avoid unpleasant gastrointestinal side effects with initiation of therapy, a dose of 1 mg. three times a day is given initially and gradually increased to the desired therapeutic amount. Salt and water retention and increased feminization are among the undesirable side effects. The most devastating, however, is exacerbation of the disease which must be watched for closely throughout the course of therapy. In properly selected patients remissions can be expected in 40 per cent.

This hormone should not be administered to any patient less than five years postmenopausal and only then with extreme care. Because of the danger of exacerbation, its use should be restricted to older patients and to failures after oophorectomy and cortisone therapy or oophorectomy and adrenalectomy.

In a recently completed cooperative joint study of effectiveness of these two sex hormones in the treatment of metastatic mammary carcinoma, estrogen in women after the fourth menopausal year proved the most effective regardless of the metastatic sites.<sup>27</sup>

## Conclusions

Despite recent advances in our knowledge of the endocrine therapy of carcinoma of the female breast, there remains much to be learned; however, there are some conclusions which can be drawn:

1. As yet no patient with carcinoma of the breast reactivated or metastatic beyond the surgeon's knife has been cured by endocrine therapy.
2. The most important factors in the therapeutic approach are the biologic age of the patient, the biologic type of tumor, and the stage or extent of the disease.
3. There is a definite place for prophylactic castration.
4. In view of our present knowledge the best approach seems to favor various endocrine stimuli being altered in sequence with a possible exception noted.
5. Endocrine therapy is not without danger and necessitates a very close follow-up.
6. Endocrine therapy in metastatic disease is not designed as a desperate last stand but an approach to palliation founded on a sound physiological basis and should be administered accordingly at strategic times during the course of the disease.
7. With more accurate testing devices a clearer set of criteria for selection will be forthcoming and should offer improved results.
8. Hormones are not a substitute for sympathetic understanding and encouragement.

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# Colonic Lesion—Benign or Malignant

## A Presentation and Discussion of Six Unusual Cases

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*In his attempt to detect and remove malignancy of the colon at the earliest possible moment in the course of this disease, the surgeon will occasionally see benign lesions that simulate malignant tumors either clinically or radiologically. Unless he is familiar with these unusual benign lesions, he may perform unnecessary surgery.*

EARLY DETECTION and early surgical intervention constitute cardinal features in the successful management of neoplasms of the colon. We have taught and learned that any patient with change in bowel habits, blood per rectum, abdominal mass, unexplained anemia, unexplained weight loss and unexplained abdominal pain should be suspected of having a colonic lesion and should be investigated for same. Our regimen of investigation (rectal examination, proctosigmoidoscopy, barium enema, etc.) and our zealous efforts to detect and treat suspicious lesions encountered at laparotomy have uncovered six interesting and somewhat unusual histologically benign colonic lesions that have simulated a malignancy either clinically or radiologically. These six

cases form the basis of this presentation and will be presented briefly to demonstrate the occasional preoperative or operative dilemma that may confront you in the conscientious management of a patient suspected of having a large bowel neoplasm.

CASE I. R. S. A-6528—VAH. A 62-year-old white male was admitted to the McGuire VA Hospital on 3/7/60 with the chief complaint of pain in the left upper quadrant, constipation and weight loss of three months' duration. The upper abdominal pain had occasionally been relieved by a bowel movement. He had been treated by his family doctor one month prior to admission for "pleurisy" and constipation. There had been no melena. He had noted a 25-pound weight loss in the few months prior to his admission.

Past History and Systems were non-contributory.

Physical Examination: Blood pressure 120/90. Pulse 96. Temperature 98.6. The patient appeared well-developed, but showed signs of recent weight loss. There was tenderness in the left upper quadrant with a suggestion of a palpable mass.

Laboratory Data: Hemoglobin 12.6. White count 6,800. BUN 10. Serology was negative.

Chest x-ray was normal. Barium enema revealed a constant segment of narrowing in the proximal descending colon 5 cm. in length. (Fig. 1)

On 3/17/60 the patient was explored and a hard mass, 5 x 3 inches, involving the descending colon and attached to the anterolateral abdominal wall was noted. There was no evidence of distant spread of the

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Presented before the Virginia Surgical Society, Williamsburg, May 20, 1961.

lesion. A partial colectomy was done. The excised colon showed no mucosal pathology. Microscopic study demonstrated a chronic inflammatory reaction with typical clusters



Fig. 1. Barium enema showing constricted area in the proximal descending colon.

of actinomycetes. (Fig. 2) A foreign body, apparently a fishbone, (Fig. 3) was found imbedded in the extra-mucosal indurated mass and represented the probable mode of infection. Postoperatively, the patient received penicillin and recovered without sequelae.

Actinomycosis is the most common of the highly fatal mycoses. The causative organism is anaerobic and the infections are usually secondarily contaminated. The fungus may be found in the upper G. I. tract of many normal people who do not have infections. The consensus is that when trauma occurs in the G. I. tract the fungus is able to invade and grow. Statistically, cervical-facial actinomycotic infection occurs 50% of the time, thoracic 15%, and abdominal 20 to 30% of the time. The

abdominal disease usually occurs in the ileocecal region, but may involve any segment of the colon and is often associated with bowel injury that may appear secondary to a



Fig. 2. Chronic inflammatory reaction with cluster of actinomycetes.

penetrating foreign body such as a fish-bone. The intestinal variety may "metastasize" and it would appear necessary that accessible lesions be removed where possible, in addition to employing penicillin and/or sulphonamides. In cases of penicillin allergy, a broad spectrum antibiotic may be employed over a long period of time with favorable results.

CASE II. H. H. A-5116—VAH. A 64-year-old colored male was admitted to the McGuire VA Hospital on 12/4/60 with a chief complaint of pain, burning and fullness in the epigastrium of twelve months' duration becoming worse in the one-month prior to admission. He had had diarrhea several days prior to admission. There had been no weight loss and no melena.

Past history was significant in that the patient had been treated on the pulmonary

disease section of the McGuire Hospital for emphysema and recurrent pulmonary infections. He had been started on INH and PAS despite negative sputum studies. Systems review was non-contributory.

carcinoma and inflammatory reaction may at times be difficult. Diverticulitis of the right colon manifests itself clinically much less frequently than diverticulitis of the left colon. Greaney and Snyder compiled 273

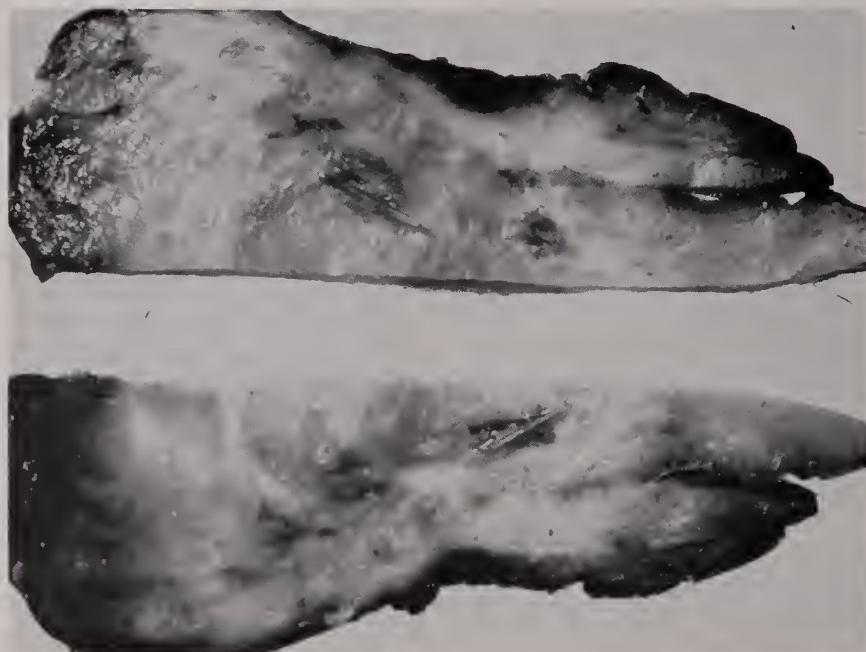


Fig. 3. Fishbone imbedded in the extra-mucosal mass.

Physical Examination: Temperature 97. Pulse 92. Blood pressure 130/80. Weight 111 pounds. There was slight tenderness in the right upper quadrant. No masses were noted.

Laboratory Data: Hemoglobin 10.9. White count 9,900. Urinalysis and liver function studies were normal.

Barium enema revealed a 5 cm. constricting lesion involving the ascending colon just proximal to the hepatic flexure. (Fig. 4) There were multiple diverticula of the entire colon.

At exploration on 12/21/60 a 5 x 6 cm. firm area in the ascending colon was identified and a right colectomy was done. Recovery was uneventful. The mucosa of the excised bowel appeared normal. Microscopic study showed diverticulitis of the ascending colon. (Fig. 5)

Narrowing of the sigmoid colon secondary to diverticulitis is not an unfamiliar finding. However, even here, a distinction between

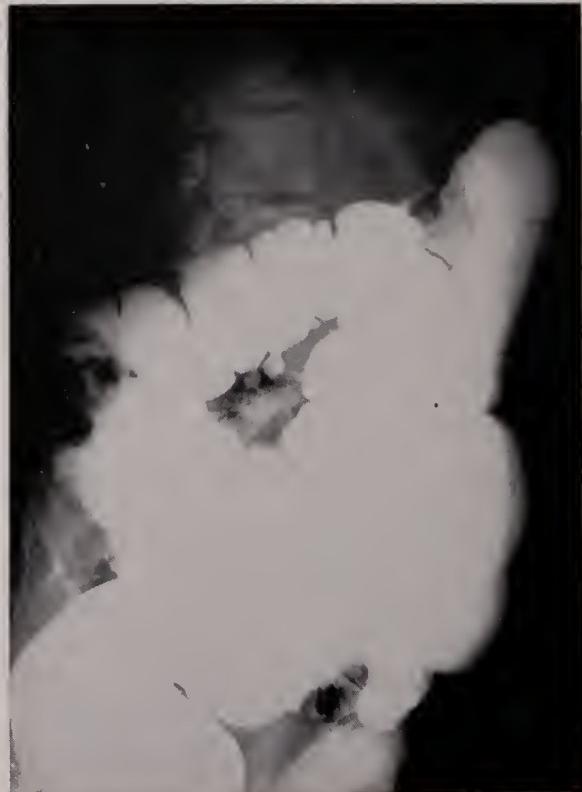


Fig. 4. Constricting lesion of the ascending colon.

published cases in 1957. Obviously, there were many more that had gone unpublished. In 1954, the Mayo Clinic had accumulated only 13 cases of diverticulitis of the cecum, two of the ascending colon and one of the hepatic flexure. Rodkey and Hermann, re-

acute attacks, as in the case presented, diverticulitis of the right colon causing a narrowed segment on barium enema examination will always create diagnostic problems and will rightly be subjected to early surgical intervention.



Fig. 5. Microscopic view showing normal mucosa with inflammatory reaction in the wall of the colon.

porting from the Massachusetts General Hospital, recorded that only 14 patients had had surgically proven diverticulitis of the right colon in the preceding 20 years. Diverticula of the right colon are frequently solitary and may be true diverticula, in that all layers of the wall are involved. This is in contradistinction to the usual diverticula of the left colon which are so-called false diverticula consisting primarily of mucosa and serosa. In generalized diverticulitis the diverticula that involve the right colon are usually of the false type, as was the case in the patient presented. The high incidence of true diverticula on the right side of the colon probably explains the fact that the average age of patients undergoing surgery for right colon diverticulitis is 46 years in contrast to 60.1 years among patients having areas of diverticulitis resected from the left colon. Because of its relative rarity as a cause of significant obstruction and intermittent sub-

CASE III. E. S. B-26-67-62—St. Philip. A 56-year-old colored female was admitted to the St. Philip Hospital on 1/15/55 because of a growth in her right side of approximately one month's duration. History revealed that she was a known diabetic and had been treated for diabetic acidosis on numerous occasions. She had been explored four months prior to this admission for repair of a ventral hernia. During this operative procedure, the surgeon noted a mass in the right side of her abdomen, presumably arising from the right kidney or cecum. No biopsy had been taken. The patient also stated that she had had fecal incontinence for many years.

Physical Examination: Blood pressure 130/80. Pulse 90. Temperature 99. The conjunctivae were pale. There was a 15 x 15 x 20 cm. non-tender, non-fluctuant mass arising from the pelvis extending toward the left side of the abdomen.

Laboratory Data: Urinalysis revealed one-plus albumin. White blood count 14,800. Hemoglobin 10.7. BUN 31 mg.-% Fasting blood sugar 289 mg.-% Albumin 2.8 gm.-%, globulin 2.4 gm.-%. Ceph. floc. was negative. Stools were negative for blood.

Intravenous pyelogram suggested slight calyceal stasis on the right side. Barium enema revealed a constant defect of the cecum and ascending colon suggesting an intrinsic lesion. (Fig. 6)

After bowel preparation and transfusion, the patient was explored on 1/23/55. A large mass was noted in the cecal region. There was a small abscess cavity within this apparent inflammatory mass. The kidney was enlarged and granular. Frozen sections from the kidney revealed no evidence of neoplasm. Biopsies from the cecal region likewise were negative for tumor. A section of the stenosed ileum that was bound in this right lower quadrant mass was removed and an ileotransverse colostomy was done. The pathological report of the excised tissue



Fig. 6. Barium enema showing a defect in the cecum and ascending colon.

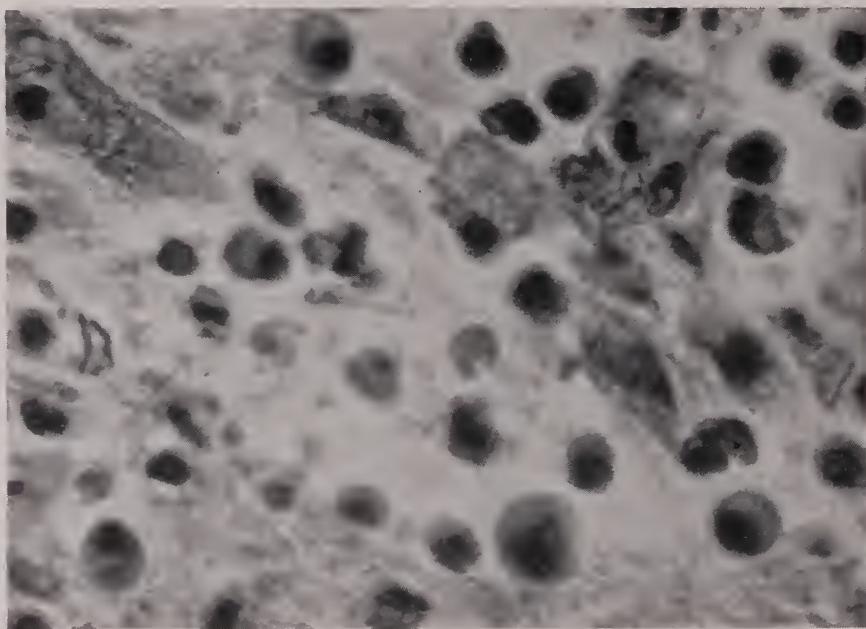


Fig. 7. Microscopic view showing large macrophages containing Donovan bodies.

showed chronic inflammation and mononuclear macrophages containing organisms resembling Donovan bodies. (Fig. 7) Post-operatively, she was treated with achromycin and streptomycin. During her convalescence

the abdominal mass diminished by one-third and the patient was symptomatically improved.

Granuloma inguinale is a venereal disease caused by a pleomorphic coccobacillus,

*Donovania granulomatis.* Characteristically, the Donovan bodies are seen in the cytoplasm of the macrophages. Although systemic infections manifested by osteomyelitis or arthritis have been noted with granuloma inguinale, it is characteristically a skin lesion which spreads by direct extension. Secondary infections in granuloma inguinale are high and account for some of the morbidity. This case is unique in that the disease involved abdominal viscera. The method of spread may have been extension from the subinguinal nodes. Treatment with Streptomycin and/or tetracycline is usually effective.

**CASE IV.** G. E. A-6632—VA Hospital. A 69-year-old colored male was admitted to the Veterans Administration Hospital on 8/15/60 with a chief complaint of lower abdominal pain and abdominal distention of three months' duration. There had been no acute episodes prior to the present illness and there had been no change in bowel habits.

Past History revealed that this patient had had a TUR and orchectomy for carcinoma of the prostate on 2/29/60. Systems review was not remarkable.

Physical Examination: Temperature 100. Blood pressure 174/100. Pulse 84. The patient appeared chronically ill. The abdomen was distended. Bowel sounds were normal. There was moderate suprapubic tenderness. There were no masses.

Laboratory Data: Hemoglobin 9.3. BUN 17. White blood count 7,200. Liver function tests were normal.

A barium enema revealed a short segment of irregular narrowing in the distal descending colon (Fig. 8) suggestive of a malignancy.

Because of retention of barium proximal to the narrowed segment and increasing abdominal distention, a right transverse colostomy was done on 8/24/60. His condition improved and on 9/19/60 he was explored. The appendix lay at the base of the sigmoid mesentery and was covered with adhesions which kinked a segment of descending colon. (Fig. 9) The contraction of the base of the mesentery, with the wide



Fig. 8. Barium enema showing a short constricted area in the distal descending colon.

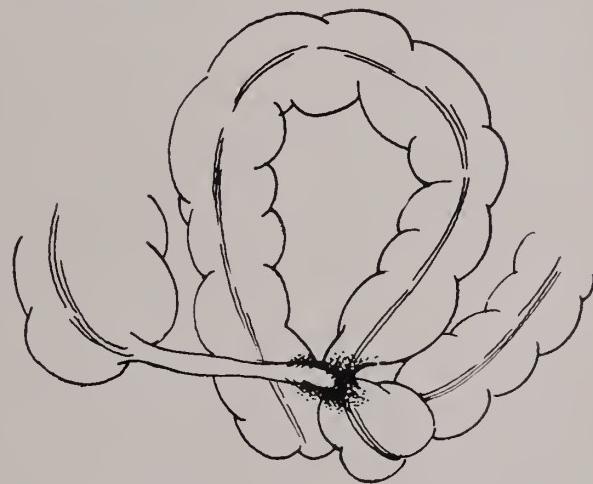


Fig. 9. Sketch showing kinking of the left colon by reaction around the tip of the appendix.

colon loop above, formed a potential area for a volvulus. There was no intrinsic colonic lesion. The appendix was removed and the contracture at the base of the mesentery was relieved. Microscopic section of the appendix showed only fibrosis.

Appendicitis, appendiceal abscess, and turned-in appendiceal stump are all known

possible causes of cecal deformity as noted on barium enema. This case is interesting in that appendiceal pathology caused x-ray evidence of constriction of the left colon. Symptoms were apparently caused by the potential volvulus and the kinked colon. Appendectomy and lysis of adhesions was curative in this case. This particular anatomical abnormality will undoubtedly be very rare as a cause of left colon obstruction.

CASE V. C. J. A-7426—VA Hospital. A 58-year-old white male was admitted to the surgical service on 5/23/60 because of a "knot" in the left groin of eight months' duration and a history of rectal bleeding. The mass in the left groin, which slowly increased in the eight months prior to admission, was reducible.

Past History revealed that the patient had been treated for a vague, lower abdominal pain in 1951 with an x-ray diagnosis of diverticulosis of the colon. He had had a chronic productive cough for many years. Systems review was essentially negative.

Physical Examination: Blood pressure 120/70. Pulse 82. Temperature 97. Chest was emphysematous. There was an easily reducible left inguinal hernia which descended to the external ring.

Laboratory Data. Hemoglobin 13 gms. White blood count 5,000. Urinalysis was negative. Barium enema demonstrated a circular defect in the proximal sigmoid colon. (Fig. 10)

On 6/8/60 the patient was explored. An enlarged appendices epiploica was found in the internal ring. (Fig. 11) The adjacent bowel over a three cm. area was injected and edematous. (Fig. 12) A colotomy was done. The mucosa appeared normal. Biopsy of the thickened bowel showed only fibrosis. The hernia was repaired from the transperitoneal approach and the epiploic appendage was removed.

Groin hernias are a frequent cause of intestinal obstruction and as such are not unique. This case is unusually interesting, however, because the colon lesion noted by x-ray was most probably a sequela of chronic,



Fig. 10. Barium enema showing circular defect in the proximal sigmoid colon.



Fig. 11. Enlarged epiploic appendage being elevated away from the wide internal inguinal ring.

intermittent incarceration led by an appendices epiploica. Because the large bowel did not appear in the inguinal canal on x-ray, and because the lesion appeared constant while no mass was demonstrated in the groin, an intrinsic colon lesion could not be ruled



Fig. 12. Sketch showing incarcerated epiploic appendage with adjacent narrowed colon.

out. This exact anatomical arrangement is undoubtedly rare since most hernias in the internal ring or spasm associated with partial recurrent incarceration can usually be detected with ease by the fluoroscopists. A recent case, more suggestive of intermittent herniation as a cause of large bowel constriction seen on x-ray, was managed simply by a standard groin approach. A segment of colon, pulled down through the internal ring during the dissection, was noted to be slightly edematous and undoubtedly was an area contused by chronic intermittent incarceration. Herniotomy should always be curative in this condition. Correct interpretation is the cardinal feature.

CASE VI. G. W. A-9800—VA Hospital. A 38-year-old white married male was admitted to the medical service of McGuire VA Hospital on 12/27/60 with a one month

history of right lower quadrant pain and weight loss of seven to eight pounds. There had been no specific G. I. or G. U. symptoms. There had been no febrile illness preceding the present illness. A diagnosis of duodenal ulcer had been made in 1947 and the patient had had intermittent episodes of vague upper abdominal discomfort and occasional epigastric bloating for approximately 10 years.

Physical Examination: Weight 156 pounds. Temperature 99.8. Pulse 96. Blood pressure 140/90. The patient was well-developed and well-nourished. Examination was essentially negative except for slight tenderness over the lower abdomen. There were no masses noted. The rectal examination was entirely negative.

Laboratory Data: Urinalysis was normal. Hemoglobin was 14.8. White count 9,600 with 70% polys. BUN 18 mg.%. Phosphorus 3.2 mg.%. Calcium 10.2 mg.%.

An intravenous pyelogram on 12/26/60 showed slight hydronephrosis on the right side. Because of an increase in the amount of apparent obstruction to the right ureter, the patient was explored on 1/16/61 via a right flank incision. A large amount of matted, indurated fat was noted around the right kidney. This indurated tissue extended to involve the ureter all the way to the pelvic brim. The right colon was apparently involved in the retroperitoneal disease (Figs. 13 & 14) and it was not apparent at that time whether or not the right colon was the possible origin of the retroperitoneal mass. The ureter was freed up on the right side with ease, and, because intrinsic right colonic pathology could not be ruled out, a right colectomy and end-to-end ileotransverse colostomy was done. When the specimen was opened, the mucosa was noted to be entirely normal. (Fig. 15) Microscopic sections of the bowel and adjacent fatty tissue was reported as showing sclerosing retroperitonitis, (Fig. 16) this being confirmed by the Armed Forces Institute of Pathology. Postoperatively, the patient did extremely poorly. There was a long interval of ap-

parent adynamic ileus. He improved and was discharged only to return on 3/10/61 complaining of severe rectal pain and abdominal distention. Examination at this time

that the bladder had been pushed markedly anteriorly and flat plates of the abdomen revealed extensive small and large bowel distention. The patient was taken back to



Fig. 13. Flank incision showing indurated tissue around the right colon.



Fig. 14. Resected specimen showing indurated mass around the right colon.

revealed a very large, extramucosal lesion in the pelvis obstructing the lower rectum and extending up into the abdomen above the symphysis. (Fig. 17) A cystogram revealed

the Operating Room on 3/10/61 and a sigmoid colostomy was done. Exploration at this time revealed extensive involvement of the retroperitoneal and the mesenteric areas

of the small and large bowel with indurated, thickened, fatty tissue. There was a large mass filling the pelvis. Biopsy specimens at this time showed a similar pattern of scleros-

tion recurred in the second postoperative period and it was apparent that the patient had developed ascites. He was tapped on two occasions with 2,000 cc. of bloody



Fig. 15. Right colon opened to show normal mucosa.



Fig. 16. Microscopic section of retroperitoneal tissue showing sclerosis and whorling of fibroblasts.

ing retroperitonitis. Postoperatively, the patient did very poorly. He was placed on large doses of cortisone. Eventually, his colostomy began to work. Abdominal dis-

ascitic fluid being removed each time. Cell block of this fluid revealed no tumor cells. Liver function test during this period showed a BSP retention of 40% with an alkaline



Fig. 17. X-ray showing Lipiodol placed in distal limb of sigmoid colostomy. There is complete colon obstruction at the level of the pelvic brim.

phosphatase of 20.8 Bodansky units. The bilirubin and thymol turbidity were normal. Repeat intravenous pyelogram at this time showed bilateral hydronephrosis, (Fig. 18) however there was moderately good emptying on both sides. It appeared that the patient had developed some obstruction to his portal or hepatic systems by the retroperitonitis. He was given .4 mg./Kg. of nitrogen mustard on 4/10/61 and 4/13/61. The ascitic fluid was markedly reduced following the nitrogen mustard injections, however the patient began to show signs of incomplete small bowel obstruction and it was impossible to feed him over any prolonged period of time. On 4/16/61, because of more marked evidence of small bowel obstruction, the patient was reluctantly taken back to the operating room and was reexplored. At exploration, the retroperitoneum was markedly distorted by firm, yellowish tissue which seemed to invade into the small and large bowel mesentery. There

was no evidence of any neoplastic disease. The liver was not remarkable. There were no enlarged nodes. Biopsy again was obtained which showed a similar histological pattern of sclerosing retroperitonitis. Adhesions were freed up and tube decompression was performed. The patient failed to respond after this third operative procedure despite the usual supportive measures and he died on 4/29/61.



Fig. 18. Intravenous pyelogram showing bilateral hydronephrosis.

Since Ormond's original report of two cases of dense, fibrotic retroperitoneal disease which involved both ureters and the aorta and vena cava, the urological literature has been abundantly supplied with reports and reviews concerning retroperitoneal fibrosis causing unilateral or bilateral hydronephrosis. The names given to this disease have been abundant and include idiopathic retroperitoneal fibrosis, chronic inflammation of the retroperitoneal fascia, periureteritis obliterans, periureteric fibrosis, sclerosing retroperitonitis, etc. Most of the reports have dealt with obstruction of one or both ureters

by a retroperitoneal histologically benign process. Treatment has usually consisted of freeing up the ureter from the inflammatory mass. Other modalities, inclusive of steroids, x-ray therapy and antibiotics have been tried with no significant alteration in the clinical pattern. The usual course in patients with ureteric obstruction has been one of gradual improvement, some cases going for two or three years before all evidence of obstruction has subsided. Reed, et al., reported a case of massive periaortic and periarterial fibrosis which markedly surrounded the aorta and iliac vessels with no evidence of vascular invasion. The same case, however, showed coronary arteries to be enmeshed in dense, fibrous tissue also. Faulk, et al., described a case of superior vena cava obstruction that responded after thoracotomy, biopsy and x-ray therapy. Of those cases reported to date, there has been no obvious evidence of invasiveness of the retroperitoneal reaction. The histological picture has characteristically shown dense collagen mixed with zones of fibroplasia. Large and bizarre fibroblastic nucleae may be seen and occasionally there are areas with lymphocytes, plasma cells, neutrophils and eosinophils. The reaction has been compared with keloids and with the picture of Riedel's struma.

The case reported here is unique in that, to our knowledge, it is the first patient presenting a picture of bowel obstruction secondary to sclerosing retroperitonitis. The further complication of apparent portal or hepatic vein obstruction is also unique. The initial response to nitrogen mustard is interesting, however no further correlation is possible. From the cases previously reported, one would surmise that if the patient had not had complications of hepatic and/or portal vein occlusion and recurrent small bowel obstruction, he might have ultimately survived this disease. The optimal approach probably consists of relieving obstruction, either in the ureters, great vessels, or bowel, wherever necessary, and then palliating the patient until the disease can subside or run its course.

## Discussion and Conclusion

These cases have been presented not only because they are unique in their clinical, histological and radiological appearance, but also because they recall certain basic concepts. No diagnostic modality is infallible. Clinically, we have all seen and, perhaps, some of us have removed malignant lesions that have appeared benign and vice versa. The most common benign lesions that may confuse us and mimic a colonic neoplasm are: appendicitis, appendiceal abscess, adhesions of the cecum, tuberculosis of the colon, actinomycosis, enterocolitis, non-specific granuloma, foreign-body granuloma, radiation colitis, amebiasis, intussusception, diverticulitis, segmental colitis, peptic ulcer with contiguous involvement of the adjacent colon, pancreatitis with contiguous colon reaction, endometriosis, and impacted stool. In addition, radiological accuracy in the diagnosis of carcinoma of the colon has been reported to vary from 28 to 94%. Allcock reviewed 200 proven cases of carcinoma of the colon. One hundred and twenty-three of the cases had had a barium enema and of this group 14 were interpreted as having no radiological evidence of carcinoma. Nine of the 14 lesions were in the cecum. One ascending colon lesion, called Crohn's disease, and two sigmoid lesions called diverticulitis, proved to be carcinoma. This same author reviewed 1,000 barium enemas and found that in eight an incorrect diagnosis of carcinoma was made. Early diagnosis is closely akin to correct diagnosis in the proper management of large bowel neoplasms. Patients are usually held responsible for most of the delay in early diagnosis; however, it has been estimated that physicians have been derelict in prompt diagnosis in approximately 30% of proven cases of neoplasms. It is not infrequent to hear our surgical candidates relate long periods of symptomatic treatment before rectal examination, proctosigmoidoscopy or barium examination was considered.

Although the cases presented proved to be

unusual histologically benign lesions, they represent a very small percent of the actual number of patients seen who were correctly diagnosed as carcinoma by barium enema and careful examination at laparotomy. An awareness of the possible benign conditions that may mimic colonic lesions clinically, radiologically and at laparotomy should be a part of every surgeon's armamentarium, so that unnecessary or ill-timed intervention will not increase our morbidity and mortality. We do, however, have to accept a small number of negative explorations and benign lesions if we are to maintain and improve our surgical results in the treatment of colonic carcinoma.

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# *Mental Health . . .*

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EDNA M. LANTZ

## **Some Encouraging (and Discouraging) Statistics About Mental Illness**

### **First Admissions Down**

During the year just passed, the "first admission rate" to the State Mental Hospitals has steadily declined. This pattern is following a national trend.

There are a number of factors which may be operating to reduce the first admission rate to public mental hospitals. One that most readily presents itself as an explanation is that a larger number of patients can be treated in an office type of psychiatric practice by the use of tranquilizing drugs. There has been, too, an increasing number of psychiatrists practicing in communities in recent years. An extremely rapid growth of community mental hygiene services has occurred. Those who cannot afford to pay the fees of a psychiatrist in private practice may be treated in State, Federal and municipally supported clinics.

Not to be overlooked is the rapid development of psychiatric sections (or beds available for psychiatric patients) in community general hospitals. Private psychiatric hospitals have increased in number and have expanded their facilities in recent years.

Back of all this is the fact that economic conditions have generally been good. It has been demonstrated that when jobs are not scarce and people are employed first admission rates go down. For example, a relative with a mild mental illness can be cared for at home by providing nursing and companionship during "good times" but this is not so easy or may be impossible during

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"hard times". Work or occupational therapy is one of the oldest of psychotherapies. Unemployment is often a precipitating factor in certain kinds of mental illness.

### **And Discharges Up**

The discharge rate from the hospitals has increased, primarily because of better staff patient ratios; more doctors, nurses, nurses aides and other personnel being employed to care for the patients while they are in the hospital.

Educational programs such as those conducted by the National Association for Mental Health and its state and local chapters have been helpful in providing somewhat better community acceptance for the mentally ill in recent years. The efforts of the rehabilitation counselors provided by the Department of Education to each of the hospitals in Virginia have been extremely helpful in finding jobs for employable patients about to be discharged or recently discharged.

The psychotropic drugs have made many more patients susceptible to other forms of psychotherapy and to recreational and occupational therapies. The drugs have also undoubtedly had a specific influence in improving the discharge rate because patients who heretofore would not have been capable of any sort of outside living are now, under the influence of the drugs, more suitable for a return home (and to their jobs in many instances) during earlier convalescence.

### **But Hospital Populations Stay Up**

Despite all of this favorable change for the mental patient, our hospital populations are not declining. They are not rising as rapidly as they did for many years but they have reached a slightly inclining plateau despite the reduced number of first admissions.

sions and the increased discharge rate. This, of course, does not make sense until the readmission rate is taken into consideration.

### **Relapse and Readmission**

The readmission rate has steadily increased in Virginia and elsewhere. What could be the reasons for this? First and foremost probably is the fact that patients who are taking tranquilizing drugs can get along very well while in the protected environment of the hospital but the drugs are not nearly so effective when the patient returns to the stresses of outside living. Then, of course, there are a number of patients who stop taking the drugs when they leave the hospital either because they cannot afford them or for other reasons. Of course, the discontinuation of the drugs may cause a reappearance of mental symptoms.

Finally, although the situation has improved, as stated earlier, the community acceptance of patients formerly hospitalized in a public mental hospital is still not complete. Many patients do return to the hospital simply because the family or the community will not give them a good chance for rehabilitation.

Another factor which definitely is operating (though to what extent it cannot be estimated) is that patients are less reluctant to return to hospitals than in former years. The increased comfort of their surroundings in the state hospitals, the improvements in staff, and a general betterment of the food and other services makes it easier for the patient to return when he finds himself in an unhappy situation in his home or in the community.

### **The Present Program**

Although Virginia has been a pioneer in the matter of "aftercare," it is obvious from the foregoing that we must improve the services for patients who are discharged from our hospitals, if we are to reduce our hospital populations. Much is being done.

An increasing number of the mental hygiene clinics are undertaking to care for patients referred to them from the hospitals

at the time of their discharge. This was the original intent of such clinics in Virginia. The special aftercare clinics operated for many years by the staff of Eastern State Hospital have been enlarged.

Central State Hospital has begun in a small way to operate aftercare clinics in some areas.

Certain local Departments of Public Health have accepted referrals from our State Hospitals and are providing drugs to indigent patients through their own staff and resources.

A study project in Northern Virginia, financed by a Federal Grant, is currently in the process of organizing, studying and examining possibilities for better integration of local community resources to render service to the discharged patient upon his release from Western State Hospital.

For the first time the appropriation for the Department of Mental Hygiene and Hospitals community services will contain a separate item of budget to provide drugs for indigent patients who are on provisional discharge from hospitals.

A survey of what is being done in other states to provide drugs for patients after discharge indicates that many states are far behind Virginia in their planning and in their program. Indeed, a number of states with considerably more wealth and proportionally larger mental health programs than Virginia still have no provision whatsoever for such patients. They are simply referred to the public departments of welfare who have often insufficient funds or medical personnel to look after such patients.

### **Summary**

Present first hospitalization rates, discharge rates and readmission rates, are in an unfavorable balance. The statistics indicate that more attention must be given to the patient after his return to the community. There are a number of ways to do this. All methods should be fully explored. The best methods should be discovered and then promoted by all concerned.

# Public Health . . .

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## **The Role of Virus Infection in Congenital Neurological Disorders**

Blood samples from more than 75,000 expectant mothers may provide the answer to how large a role virus infection plays in mental retardation, Mongolism, cerebral palsy and other neurological disorders with which infants sometimes are born.

In an unprecedented study, these blood samples are being tested for evidence of infection by scientists at the National Institute of Neurological Diseases and Blindness and the National Institute of Allergy and Infectious Diseases. These are two of the seven institutes that comprise the National Institutes of Health, the research arm of the U. S. Public Health Service.

The blood-sampling study is part of a larger project which is designed to make periodic examinations and to keep records on pregnant women and their babies at 15 medical centers throughout the Nation over a period of at least 10 years. The project is an attempt to understand the processes of conception, pregnancy, labor, and delivery in relationship to the growth and development of the newborn child. The Medical College of Virginia is one of the 15 centers engaged in this study.

Known as the Child Development Study at the Medical College of Virginia, it has three main objectives:

1. To evaluate the correlation of events during pregnancy, at delivery, and in the neonatal period, with subsequent presence of "brain damage syndromes". Some clinical entities which comprise the brain damage syndrome are cerebral palsy, mental subnormality and epilepsy.

2. To evaluate preceding events correlated with fetal deaths, premature birth,

neonatal death and congenital anomalies.

3. To evaluate possible genetic factors in the production or modification of the abnormal outcome groups, realizing that there are limitations in obtaining advanced detailed genetic data; but that intensive retrospective effort will be undertaken in cases ultimately defined as abnormal.

An estimate of the scope of the perinatal morbidity and mortality may be measured by several yardsticks. Some 360,000 cerebral palsied individuals in the United States require about \$216 million annually for care. An estimated \$250 million is expended each year for the mentally retarded in state institutions alone, and no one knows the cost of those in private institutions. Whether measured in terms of financial expense, human waste, or heartbreak, the problem is one of major importance to the entire nation.

## **Methodology**

The methodology of the study consists of: design, data collection, data analysis, and interpretation; all of which are the function of the collaborating group of medical centers and the National Institutes of Health central coordinating office, with consultation from outstanding experts from many disciplines. Never before have such masses of data been handled in association with so many variables. For this task, electronic computers are being used.

The sample of the Child Development Study at the Medical College of Virginia consists of selection of every white and every other Negro pregnant woman from the City of Richmond who is registered in the Medical College's Obstetrical Clinic. (The Counties of Henrico, Chesterfield, and Hanover were included prior to January 1, 1962).

The study encompasses the broad phases of obstetrics and pediatrics. Detailed information is obtained from the gravida regarding medical and environmental factors which might be significant, both before and during pregnancy. There are extensive examinations throughout pregnancy and during labor, delivery and postpartum periods. An equally detailed evaluation of the offspring is continued throughout infancy and early childhood, including special examinations at regular intervals and pathological examinations whenever indicated. This information is collected and recorded by uniform methods of data collection.

The Obstetrical Phase consists of:

1. Initial interview and examination of the gravida; past medical history, past obstetrical history, and history of illness, accidents and medications during this pregnancy.
2. Prenatal return visits.
3. Evaluation of medical and obstetrical complications.
4. Labor and delivery observations; medication, operative procedures, use of forceps and anesthesia recorded.
5. Post-partum period; infectious process in the mother noted.
6. Laboratory examinations on gravidae; urinalysis, hemoglobin, blood typing, antibody titers, and virology studies.
7. Pathology; examination of each placenta.

The Pediatric Phase consists of:

1. Initial observation of the infant; one, two, and five minute Apgar scoring, newborn pediatric and neurological examinations.
2. Laboratory examinations on newborn; hemoglobin, blood typing, bilirubin, and virology studies.
3. Subsequent periodic examinations of

the infant and child; a four-month pediatric, an eight-month psychological, a one-year neurological, and a proposed three-year speech and hearing, a four-year psychological and a final seven-year comprehensive examination.

4. Special examinations of abnormal outcome groups; pathological examinations on autopsy material and other special diagnostic tests or examinations.

It is an epidemiological approach which is prospective, collaborative, and multidisciplinary. The emphasis is on the prospective; however, there is also a retrospective effort to give scientific appraisal of routine records. Some factors which can damage the product of conception are suspected or known, but many are not. It is hoped to resolve divergent reports or prospective and retrospective studies as to etiologic (or associative) importance of suspected factors.

This is made possible by the collaboration of the 15 different institutions which will ultimately provide approximately 75,000 women, a number considered to be an adequate sample, for statistical analysis of the rare outcome groups. The Child Development Study at the Medical College of Virginia will contribute approximately 3,000 gravidae and their offspring and to date 1,668 gravidae have been registered.

The multidisciplinary nature of the study is rewarding both locally and nationally. The team approach is applied to the solution of perinatal mortality and morbidity by a variety of disciplines simultaneously employing clinical, laboratory, and field techniques. Nationally, such participants and consultants consist of various disciplines in obstetrics, pediatrics, neurology, genetics, sociology, statistics, et cetera.

The Child Development Study project at the Medical College of Virginia is directed by Dr. Agnes L. Milan, Assistant Professor of Pediatrics and Community Medicine.

Some of the side benefits made possible by the study include:

1. Stimulation of interest in improved hospital records and in improved methods of neurological examination of the infant, with early diagnosis of neurological abnormality.

2. Demonstration of the applicability of the epidemiological approach to perinatal mortality and morbidity.

3. Bringing together multidisciplinary groups both locally and nationally to hasten solution of problems by cross-fertilization of ideas.

4. Utilization of the sample for ancillary studies according to the special interests and resources of the collaborating medical centers.

In conclusion, definitive results will be delayed until the completion of the study. Data will fall into one of three categories: descriptive, associative, and etiological of which associations will comprise the majority. These data should provide new leads which can be explored more fully in future studies.

MONTHLY REPORT OF BUREAU OF COMMUNICABLE  
DISEASE CONTROL

	Feb. 1962	Feb. 1961	Jan.- Feb. 1962	Jan.- Feb. 1961
Brucellosis -----	1	5	1	5
Diphtheria -----	1	4	2	6
Hepatitis (Infectious) -----	176	88	333	179
Measles -----	1407	945	2666	2374
Meningococcal Infections---	8	7	15	13
Aseptic Meningitis -----	3	1	4	2
Poliomyelitis -----	0	0	1	0
Rabies (In Animals) -----	15	18	25	37
Rocky Mt. Spotted Fever---	0	0	1	2
Streptococcal Infections -----	901	700	1616	1293
Tularemia -----	0	1	2	3
Typhoid -----	1	0	2	0

### Legislative Strait Jackets in Medicine

Some of the suggestions (for "regulating" the prescription drug industry) could lead to such legislative strait jackets that the practicing physician would have no flexibility for individual judgment for his patients. More and more, medicine seems to be becoming a challenge to decide what not to do rather than what to do. If the trend continues the average doctor may worry more about how to extricate himself from a case with minimum personal risk than how to treat the sick person for maximum patient benefit.—Austin Smith, M.D., President, Pharmaceutical Manufacturers Association, to State Officers' Conference of American Academy of General Practice.

# Editorial....

## Special Issues of the Journal

THE CURRENT ISSUE of the Virginia Medical Monthly is devoted to publication of papers read at the Annual Meeting of the Virginia Surgical Society last Spring in Williamsburg. This is the first time that articles presented by a specialty group have constituted a single issue of the Journal. This innovation resulted from a decision by the Virginia Surgical Society to designate our State journal the official organ of that organization.

Several other specialty groups within the State have also asked about the possibility of having the Virginia Medical Monthly serve as their official organ. Within limits this may add to the interest and attractiveness of this publication. Your Editorial Board is aware that the widespread adoption of such a policy may be undesirable. The reception accorded this number will be noted with interest and doubtless will play a major role in determining whether the idea is sound and should be broadened to include other special issues.

The members of The Medical Society of Virginia are urged to express their opinion concerning this matter.

## The Uninformed Medical Speaker

DURING the past few years much has appeared in professional journals about proposed changes in the curriculum of our medical schools. In recent months some of our newspapers have evinced considerable interest in this same subject. One topic that is never mentioned when changes are discussed is the addition of a course in public speaking. There are many reasons why this should be offered as an optional, if not a regular course in medical colleges.

Physicians as a group are a rather inarticulate lot. This is especially true when they are called upon to discuss anything beyond the immediate confines of their professional work. A second closely related weakness is a failure to master the subject thoroughly before undertaking to discuss it. This is always hazardous but it may be disastrous when the subject has to do with the various plans to furnish medical care for the aged. This topic has more than the usual quota of pitfalls.

Our adversaries are generally well informed and they relish nothing better than the opportunity to highlight some inaccuracy or inconsistency in a presentation by a physician. Many of our opponents are paid propagandists whose livelihood depends upon their ability to engage in rough and tumble debate. The cause of medicine is not advanced by the unwary physician who enters the arena with such an adversary and attempts to give battle without a thorough knowledge of his subject. This is true whether he speaks at a service club in his home town or appears before a congressional committee meeting in Washington.

We cannot all have the oratorical ability of Dr. Edward Annis but at least we can fortify ourselves with the facts before we attempt to speak.

HARRY J. WARTHEN, M.D.

# News....

## New Members.

The following members were admitted into The Medical Society of Virginia during the month of February:

Leonard Anthony Austin, M.D.,  
Charlottesville  
Katherine Davis Bachman, M.D.,  
Falls Church  
Wilson Nimrod Cobbs, M.D., Norfolk  
Henry Fairfax Conquest, M.D.,  
Richmond  
Walter George Crowe, M.D.,  
Falls Church  
Nellie Ray Dorsey, M.D., Norton  
Addison McGuire Duval, M.D.,  
Williamsburg  
Katherine Virginia Greene, M.D.,  
Arlington  
Archibald Southgate Hampton, M.D.  
Luray  
Keith Hester, M.D., Newport News  
Frederick Willis Hubach, M.D., Herndon  
Elena Astra Kalvis, M.D., Burkeville  
Robert Donald Kiesel, M.D., Arlington  
Panos George Koutrouvelis, M.D.,  
Falls Church  
John William Leabhart, Jr., M.D.,  
Arlington  
Willie Herman Morris, Jr., M.D.,  
Lynchburg  
John Turpin Myles, M.D., Newport News  
Theron R. Rolston, M.D., New Hope  
Walter Ernest Schlabach, M.D., Luray  
Irvin Norman Sporn, M.D., Richmond  
Edmund McCulloch Stapleford, M.D.,  
Newport News  
Richard Claude Vadney, M.D., Arlington  
Archibald Cunningham Wagner, M.D.,  
Warrenton

## Dr. Latane Honored.

Dr. Henry A. Latane, Alexandria, was recently honored by the Salvation Army Advisory Board. He was presented a plaque

for his twenty-two years of service on the Board.

## To Move to Alaska.

Drs. Cary and Betty Whitehead and their five children plan to leave Chatham about June 1st for Seldovia, Alaska. They will take charge of a seven-bed hospital in this fishing village of 500 population on the coast of Alaska. Dr. Cary Whitehead says the decision was made last summer when he and his family were vacationing in Alaska and he learned that Seldovia was without a doctor.

Seldovia is about 900 miles northwest by water from Seattle and 175 miles south of Anchorage. The weather will compare with that of the New England states. It has one movie house, electricity, a good public school and other modern conveniences — except television. There are only about six automobiles in the town.

## Dr. Peter N. Pastore,

Richmond, has been named to the University of Richmond chapter of Phi Beta Kappa honorary scholarship society.

## Virginia Association of Mental Health.

Dr. John B. Birch, Abingdon, has been re-elected president of this Association and Dr. Harold I. Nemuth, Richmond, has been elected vice-president. Dr. L. D. Soper, Danville, was named a director-at-large.

## Dr. Camp.

Dr. Paul D. Camp, Richmond, has been re-elected to the board of directors of the American Heart Association for a three-year term.

## Mr. Robert A. Versprille

Is the new Executive Secretary of the Norfolk County Medical Society.

## **Medical Exchange Between Americas.**

A medical "big brother" exchange for North and South America will begin this summer between the University of Virginia and the University del Valle in Cali, Colombia. Dr. Thomas H. Hunter, dean of the University of Virginia Medical School, will leave July 1st for a year in Cali. He will spend as much time learning as he will be passing on knowledge. He must absorb all he can of the problem there and return to the United States prepared to tell medical educators what needs to be done.

Dr. Gabriel Velasquez is the dean of the Cali Medical School. This school is eleven years old and has a staff of 120. There are 290 doctors in the school. It has taken a lead in dropping the European tradition of teaching for U. S. methods developed in World War II.

## **Dr. Frederick J. Spencer**

Has been named acting director of the communicable disease control bureau of the State Health Department. He succeeds Dr. Mason Romaine who recently retired. Dr. Spencer has been regional director of local health services and acting director of the Fredericksburg-King George-Spotsylvania-Stafford health district.

## **Drs. Meyer and Hamlett.**

Drs. Julien H. Meyer and Luther J. Hamlett announce the removal of their office for the practice of obstetrics and gynecology of 101 Medical Center Building, 127 McClanahan Street, southwest, Roanoke.

## **Wanted.**

Obstetrician-gynecologist needed for group practice. Board eligible or certified.

To head department. Location in Southwestern Virginia. Write #20, care Virginia Medical Monthly, 4205 Dover Road, Richmond 21, Virginia. (Adv.)

## **Wanted.**

Roentgenologist needed for group practice in Southwestern Virginia. Write #25, care Virginia Medical Monthly, 4205 Dover Road, Richmond 21, Virginia. (Adv.)

## **Wanted.**

Obstetrical-gynecological associate, group practice. Two-man service. Southwest Virginia. Very progressive financial scale. Boards not required. Write #10, care Virginia Medical Monthly, 4205 Dover Road, Richmond 21, Virginia. (Adv.)

## **Opportunities Available in Virginia**

For physicians as Directors of Local Health Departments; salary range \$12,000 to \$15,675. Entrance salary dependent upon qualifications. Inservice training and post-graduate study opportunity available. Applicants must be American citizens, under 48 and eligible for Virginia licensure; liberal sick leave, vacation, group life insurance and retirement benefits. Write Director of Local Health Services, Virginia State Department of Health, Richmond 19, Virginia. (Adv.)

## **Doctor's Suite Available.**

In medical building at very busy, large apartment community of 10,000—with immediate surrounding area of 20,000 more. Three rooms and bath. This is a wonderful opportunity. Contact L. F. Kettel, 313 North Glebe Road, Arlington 3, Virginia. Phone Jackson 2-5004. (Adv.)

# *Current Currents*

KING-ANDERSON: President Kennedy is continuing his all-out campaign to bring about passage of H. R. 4222. In his recent health message to the Congress, he said, in effect, that while private health insurance has made notable advances in recent years, the older people are still unable to pay the necessary high premiums for adequate protection. He criticized Kerr-Mills legislation as inadequate and unpalatable inasmuch as it embodies a "means test" and reaches "very few of those who are not eligible for public assistance but are still not able to afford the care they need."

Dr. Leonard Larson, President of AMA, fired right back with the statement that the Kennedy program is not health insurance—"it is political medicine." According to Dr. Larson, the real issue is not medical care versus no medical care for the elderly. Instead, the real issue is: should workers and employers be forced to pay substantially increased taxes to provide medical care for millions financially able to take care of themselves. Dr. Larson reiterated physicians' support of Kerr-Mills for those who need help and health insurance for the non-needy aged.

HEW Secretary Ribicoff and Congressmen Cecil King (D., Calif.) also got into the battle by taking verbal punches at AMA. Mr. Ribicoff stated that AMA's days of success are numbered and that its arguments are losing effectiveness. Congressman King inserted into the Congressional Record a 38-page statement attacking AMA's testimony on H. R. 4222. The AMA staff is now preparing a critique of Mr. King's statement for insertion into the Congressional Record.

HEALTH MESSAGE: Because of the King-Anderson controversy, many physicians are not fully aware of the President's other health proposals. They are (1) a 10-year program of grants to plan and construct schools of medicine, dentistry, and public health; (2) a program of federal scholarships for students coupled with cost-of-education payments to schools; (3) a 3-year program of federal assistance to get American children immunized against polio, diphtheria, whooping cough, and tetanus—the government paying the costs of vaccines for all children under five provided that state and local communities set up inoculation programs; (4) legislation authorizing 5-year federal loans to help set up group practice medical and dental clinics; (5) stepped up health research including a new Institute for Child Health and Human Development and authorization for contracts and cooperative arrangements for research related to Maternal and Child Health and Crippled Children Services; (6) more funds for the National Institute of Mental Health to increase its program for the training of professional mental health workers and physicians; (7) a program of federal research and grants to help combat the growing problems of air pollution; (8) establishment of a National Environmental Health Center for research and training in air and water pollution and radiation hazards coupled with increased appropriations in these fields; (9) legislation to encourage states to provide facilities and services for migrant workers (bill

has already passed the Senate); (10) adoption of a reorganization plan for the U. S. Public Health Service according to a plan to be sent to Congress later.

ALABAMA PR SURVEY: The Alabama Public Relations Committee recently asked a number of responsible Alabama citizens, "What, if anything, is wrong with the medical profession in Alabama?" Some of the answers will be of interest to physicians everywhere: ". . . It seems to me that the greatest weakness of the medical profession is to be found in its failure to enforce ethical standards and conduct within its membership. It is obvious that the public is not sufficiently protected from those few who engage in questionable practice . . . . President, Junior College.

". . . If I had any criticism at all, I should think that your Association might improve its public relations by selling the general public on the reasons and justification for medical fees. As far as I personally am concerned, I have never had a charge for professional services which I thought was out of line. In instances where I have heard such criticism expressed, in my opinion it was in all probability due to lack of understanding of what was entailed . . . . President, Industrial Firm.

". . . There are three things that might be a problem. The first is that there might be a better way that doctors could explain the reasons for the amount of their charges instead of just one amount which is usually larger than the patient expected. Another point is, especially in extreme cases, many people feel that doctors should be willing to make house calls. Another way that doctors might be able to make a better impression on the general public is for them to find a little more time to participate in activities of a civic nature. So often they do have good reasons for not doing so. However, I definitely feel that this could be improved upon . . . . President, a local Chamber of Commerce."

SEATTLE WORLD'S FAIR: A number of our members have requested information concerning the Seattle World's Fair which opens on April 21 and runs through October 21. The Washington State Medical Association has recommended that hotel reservations in Seattle be obtained by contacting Expo Lodging Service, Seattle World's Fair, Seattle 9. Information on scientific meetings scheduled in the State during that time can be obtained by writing the Washington Medical Association, 1309—7th Avenue, Seattle 1.

DID YOU KNOW? Although the largest American family is the Smiths, there is only one Smith Memorial Hospital in the country, situated at Deborah, Iowa.

Color blindness is no longer a bar to military service and those unable to distinguish bright red from bright green will be assigned jobs that do not require acute color perception.

Males outnumbered females in the United States by 2,700,000 in 1910, while today the figure is reversed with females outnumbering males by 2,700,000.

## Obituaries . . .

### **Dr. David Patteson Scott,**

Prominent physician of Lynchburg, died of pneumonia at the University of Georgia Hospital in Atlanta on February 12th. He and Mrs. Scott were returning to Lynchburg from a southern trip. Dr. Scott was a native of Bedford County and seventy-one years of age. He graduated from the Medical College of Virginia in 1911 and practiced in McDowell County, West Virginia, before locating in Lynchburg in 1919. Dr. Scott had been a member of The Medical Society of Virginia for forty-eight years.

An editorial in the Lynchburg Daily Advance stated: "Dr. Scott was never too busy to make a call upon an ill person and he was never too rushed to say a word of encouragement to his patients and their families. He was a genuine humanitarian, taking an interest in the world about him and giving wise counsel to those in distress."

His wife and a daughter survive him.

### **Dr. William Alfred Mitchell,**

Newport News, died February 24th, following a heart attack. He was forty-seven years of age and received his medical degree from the University of Virginia in 1938. Dr. Mitchell had been a member of The Medical Society of Virginia for eighteen years.

His wife and two children survive him.

### **Dr. Samuel Edwin Hughes, Jr.,**

Holden, Massachusetts, died February 1st, at the age of sixty-two. He was a graduate of the Medical College of Virginia in 1924. Dr. Hughes was a Captain (MC) USNR, retired, having served in World Wars I and II. He had recently been Senior Medical Officer at VA Hospitals in Oteen, North Carolina; Downey, Illinois; Springfield, Missouri; and Rutland Heights, Massachusetts.

Dr. Hughes had been a member of The Medical Society of Virginia since 1949.

His wife and a daughter survive him.

### **Dr. Miller.**

WHEREAS, it has pleased Almighty God to remove from us our friend and fellow Physician—Dr. E. Howe Miller.

WHEREAS, His untiring valued service to the people of Danville and surrounding area over a period of many years prior to his retirement a few years ago was and shall be an inspiring example to all who knew him.

WHEREAS, He was ever alert for an opportunity to improve the services of the medical profession.

WHEREAS, His personal life was an inspiration to those who worked closely with him in the practice of medicine and surgery.

Now THEREFORE BE IT RESOLVED, first—That we express our gratitude to the Great Physician for this valuable member of our profession, stretching across more than four score years.

Second—That we pledge to each other our renewed efforts in trying to realize and maintain the high standards in our profession which he represented.

Third—That we record our sense of loss to our profession, our City, and ourselves individually in his going.

J. J. NEAL, SR., M.D.  
H. R. BOURNE, M.D.  
D. L. AREY, M.D.

### **Dr. Wiseman.**

Resolution adopted by the Danville-Pittsylvania Academy of Medicine on the death of Dr. Henry Adolphus Wiseman, Jr., on November 11, 1961.

With profound sorrow, the Danville-Pittsylvania Academy of Medicine records the death of one of its most esteemed members.

Dr. Wiseman graduated from the University of Virginia, Department of Medicine, in 1901. As Captain of the local Artillery Unit, Battery E, he sailed with his unit soon after the declaration of war, World War I. He was transferred to the Medical Corps where he served with distinction, returning to private practice with the rank of Major. Motivated by broad human sympathies he served as Surgeon with the English Army in South Africa in the Boer War.

Dr. Wiseman was always found on the forefront of

every civic activity. For many years he served as Elder in the First Presbyterian Church.

Dr. Wiseman exemplified in his personal life, military service and professional activities the finest qualities of gentleman, officer and physician. His untiring efforts in behalf of his patients, without distinction of race or social position, endeared him to everyone.

The Academy wishes to express its appreciation of these qualities and enter upon the minutes this testimony to his memory.

With the sense of personal and community loss is mingled deep sympathy for the members of his family.

BE IT THEREFORE RESOLVED that this expression of appreciation be sent to the family of Dr. Wiseman and also to the Virginia Medical Monthly.

SAMUEL NEWMAN, M.D., *Chairman*  
RALPH LANDES, M.D.  
JOHN NEAL, SR., M.D.  
Committee

### Dr. Freed.

WHEREAS, Dr. Charles Conrad Freed, a beloved member of the Augusta County Medical Society, surrendered this mortal life, to reap his reward on September 16, 1961, and

WHEREAS, we his colleagues of long standing, who recognize in his passing a great loss to the profession and to the community, wish to pay tribute to his memory by the unanimous adoption of this resolution:

Dr. Freed was born in Middlebrook, on January 9, 1900. He was the son of a Lutheran minister and at an early age the family moved to Columbia, South Carolina, when his father became President of the Southern Seminary in that city. Later he attended Newberry College and also the University of South Carolina for his premedical education and was graduated with the degree of Doctor of Medicine from the Medical College of South Carolina. After an internship at McCloud Infirmary in Florence, South Carolina, he served for a while with the South Carolina Public Health Service. This was followed by a short period in general practice at Gaffney and Dillon, South Carolina. It was during this time that he met and later married Elizabeth Stackhouse, who was then a resident of Dillon.

Having decided to abandon general practice in

favor of specialization, he went to the New York Eye and Ear Infirmary in 1927 where he received his postgraduate training in Ophthalmology and Otolaryngology. He also received some additional training at Gill Memorial Hospital in Roanoke.

Dr. and Mrs. Freed then settled in Waynesboro, where he practiced his specialty until failing health forced his retirement about two years ago. Dr. Freed was instrumental in the founding of the original Waynesboro General Hospital, which was later renamed the Waynesboro Community Hospital. At one time, he was President of the Medical Staff of the Hospital, and has also been a President of the Augusta County Medical Association. He was, for many years, an active Rotarian and in 1935-36 served as its President. He was a devoted and influential member of the Grace Lutheran Church and a member of the Masonic order. His interest in the community in which he lived was exhibited by his service as a member of the Public School Board and his active participation in the Fishburne-Hudgins Education Foundation which came to the rescue of Fishburne Military School in its time of adversity, and helped it to achieve the success which it now enjoys. He also established an annual award, which bears his name, to be awarded to some student at Fishburne Military School each year for outstanding achievement. These are just a few of the many ways in which he endeared himself to the community.

WHEREAS, we his fellow members of the Augusta County Medical Society, unite with his many grateful patients and friends to share with his family in their bereavement. His friendly demeanor, his keen sense of humor, and his deep interest in community affairs will be missed by all who were privileged to know him.

NOW, THEREFORE, BE IT RESOLVED by the Augusta Medical Society, on this the tenth day of January, 1962, that we convey to his family our sincere sympathy and deep respect for his memory. This evidence of our high regard and love for him will be recorded as a Memorial to him for all posterity to see.

BE IT FURTHER RESOLVED, that a copy of this Resolution be sent to his family, a copy to the Virginia Medical Monthly, and a copy to be preserved as a part of the permanent records of this Society.

JAMES A. HIGGS, JR., M.D., *Secretary*  
Augusta County Medical Society

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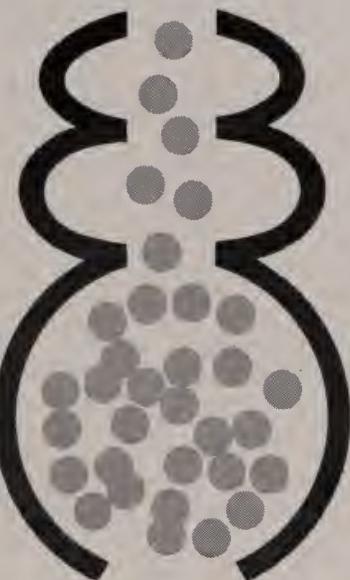
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five times daily) for children 8 to 12 years. Lomotil is supplied as unscored, uncoated white tablets of 2.5 mg. and as liquid containing 2.5 mg. in each 5 cc. A subtherapeutic amount of atropine sulfate (0.025 mg.) is added to each tablet and each 5 cc. of the liquid to discourage deliberate overdosage. The recommended dosage schedules should not be exceeded.

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1. Demeulenaere, L.: Action du R 1132 sur le transit gastrentestinal, Acta Gastrent. Belg. 21:674-680 [Sept.-Oct.] 1958.
2. Kosich, A. M.: Treatment of Diarrhea in Irritable Colon, Including Preliminary Observations with a New Antidiarrheal Agent, Diphenoxylate Hydrochloride (Lomotil), Amer. J. Gastrent. 35:46-49 [Jan.] 1961.
3. Weingarten, B.; Weiss, J., and Simon, M.: A Clinical Evaluation of a New Anti-diarrheal Agent, Amer. J. Gastrent. 35:628-633 [June] 1961.

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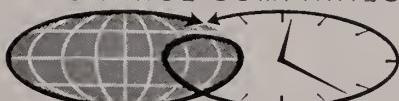


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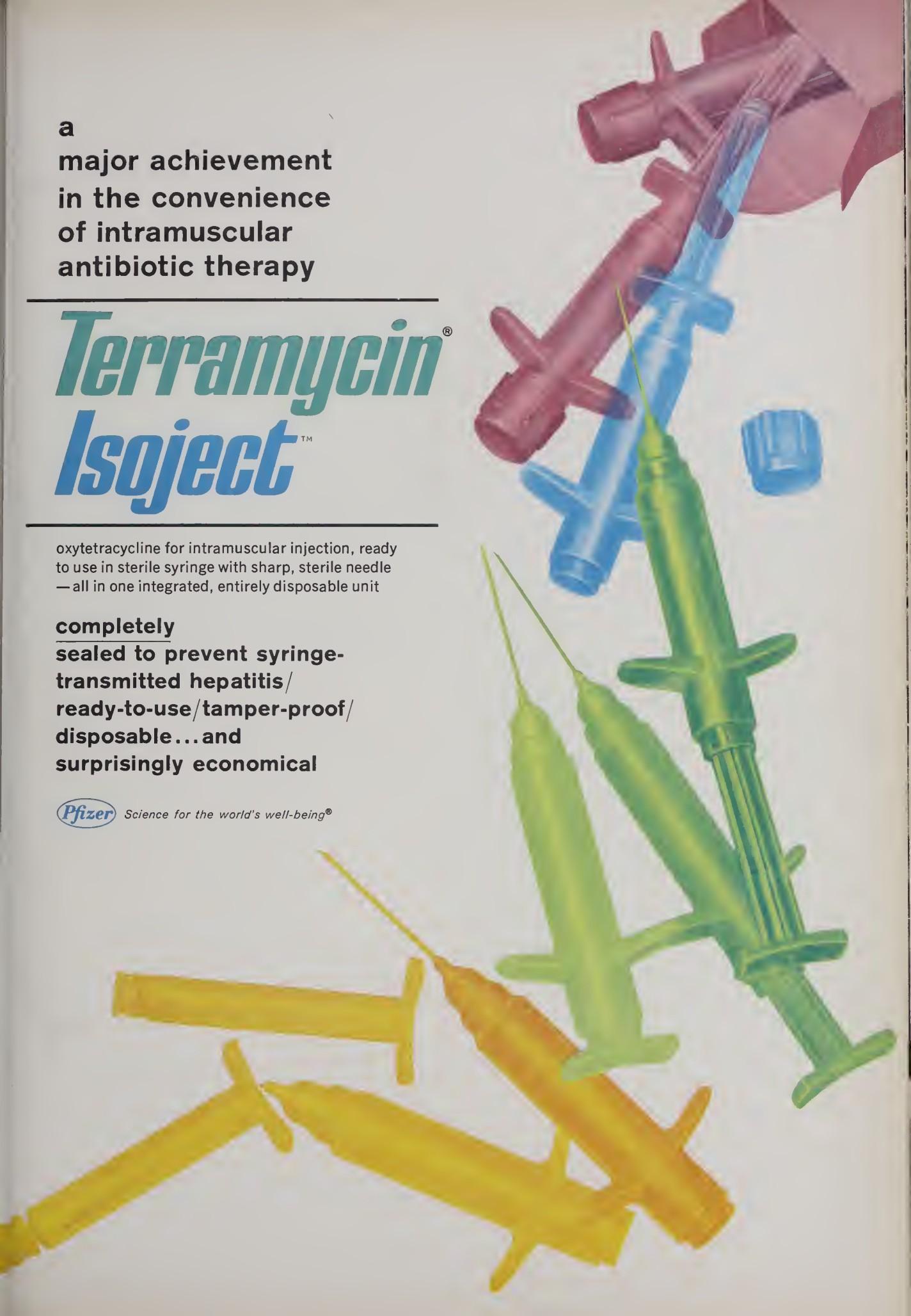
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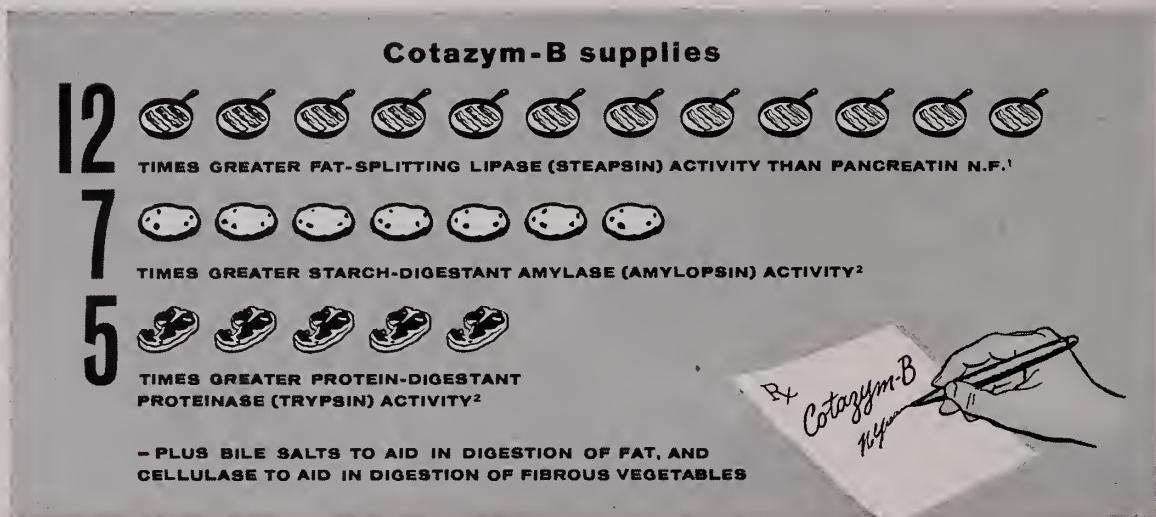
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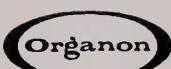
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REFERENCES: 1. Best, E. B., Hightower, N. C., Jr., Williams, B. H., and Carobasi, R. J.: South. M.J. 53:1091, 1960. 2. Analytical Control Laboratories, Organon Inc. 3. Best, E. B., et al.: Symposium at West Orange, N. J., May 11, 1960. 4. Thompson, K. W., and Price, R. T.: Scientific Exhibit Section, A.M.A., Atlantic City, N. J., June 8-12, 1959. 5. Weinstein, J. J.: Discussion in Keifer, E. D.: Am. J. Gastro. 35:353, 1961. 6. Rubin, J. M., McBee, J. W., and Davis, T. D.: Chicago Medicine, Vol. 64, No. 2, June, 1961. 7. Berkowitz, D., and Slik, R.: Scientific Exhibit Section, A.M.A., New York, June 25-30, 1961. 8. Berkowitz, D., and Glassman, S.: N. Y. St. J. Med. 62:58, 1962.

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1. Youmans, J. B.: Am. J. Med. 25:659 (Nov.) 1958

**cardiac diseases** "Who can say, for example, whether the patient chronically ill with myocardial failure may not have a poorer myocardium because of a moderate deficiency in the vitamin B-complex? Something is known of the relationship of vitamin C to the intercellular ground substance and repair of tissues. One may speculate upon the effects of a deficiency of this vitamin, short of scurvy, upon the tissues in chronic disease."<sup>2</sup>

2. Kampmeier, R. H.: Am. J. Med. 25:662 (Nov.) 1958.

**arthritis** "It is our practice to prescribe a multiple vitamin preparation to patients with rheumatoid arthritis simply to insure nutritional adequacy . . ."<sup>3</sup>

3. Fernandez-Herlihy, L: Lahey Clinic Bull. 11:12 (July-Sept.) 1958.

**digestive diseases** Symptoms attributable to B-vitamin deficiency are commonly observed in patients on peptic ulcer diets.<sup>4</sup> Daily administration of therapeutic vitamins to patients with hepatitis and cirrhosis is recommended by the National Research Council.<sup>5</sup>

4. Sebrell, W. H.: Am. J. Med. 25:673 (Nov.) 1958. 5. Pollack, H., and Haipern, S. L.: Therapeutic Nutrition, National Academy of Sciences and National Research Council, Washington, D. C., 1952, p. 57.

**degenerative diseases** "Studies by Wexberg, Jolliffe and others have indicated that many of the symptoms attributed in the past to senility or to cerebral arteriosclerosis seem to respond with remarkable speed to the administration of vitamins, particularly niacin and ascorbic acid. These facts indicate that the vitamin reserve of aging persons is lowered, even to the danger point, more than is the case in the average American adult."<sup>6</sup>

6. Overholser, W., and Fong, T.C.C. In Stieglitz, E. J.: Geriatric Medicine, 3rd edition, J. B. Lippincott, Philadelphia, 1954, p. 264.

**infectious diseases** Infections cause a lowering of ascorbic acid levels in the plasma; and the absorption of this vitamin is reduced in diarrheal states.<sup>7</sup>

7. Goldsmith, G. A.: Conference on Vitamin C. The New York Academy of Sciences, New York City, Oct. 7 and 8, 1960. Reported in: Medical Science 8:772 (Dec. 10) 1960.

**diabetes** Diabetics, like all patients on restricted diets, require an extra source of vitamins.<sup>8</sup> "Rigidly limiting the bread intake of the diabetic patient automatically eliminates a large amount of thiamin from the diet. . . . There is some evidence of interference with normal riboflavin utilization during catabolic episodes."<sup>9</sup>

8. Duncan G. G.: Diseases of Metabolism 4th edition W. B. Saunders, Philadelphia, 1959, p. 812. 9. Pollack, H.: Am. J. Med. 25:708 (Nov.) 1958.

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*References:* 1. DeNyse, D. L.: M. Times 87:1512 (Nov.) 1959.  
2. Gruenberg, F.: Current Therap. Res. 2:1 (Jan.) 1960.

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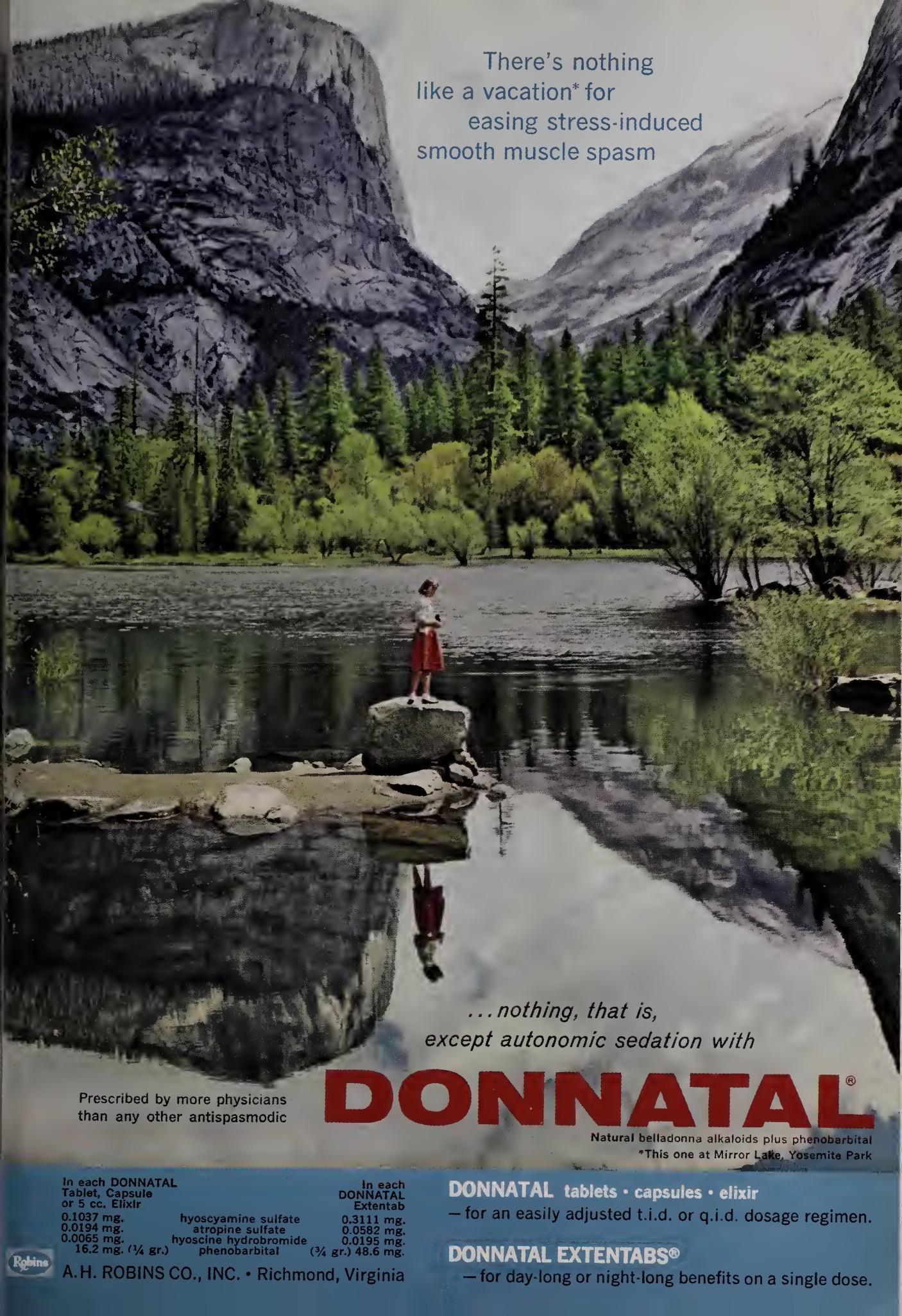
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**References:** 1. Carpenter, E. B.: South, M. J. 51:627, 1958. 2. Hudgins, A. P.: Clin. Med. 8:243, 1961. 3. Lamphier, T. A.: J. Abdomin. Surg. 3:55, 1961. 4. Levine, I. M.: Med. Clin. N. America 45:1017, 1961. 5. Meyers, G. B., and Urbach, J. R.: Penna. M. J. 64:876, 1961. 6. Perchuk, E., Weinreb, M., and Aksu, A.: Angiology 12:102, 1961. 7. Poppen, J. L., and Flanagan, M. E.: J.A.M.A. 171:298, 1959. 8. Schaubel, H. J.: Orthopedics 1:274, 1959. 9. Steigmann, F.: Am. J. Nursing 61:49, 1961.

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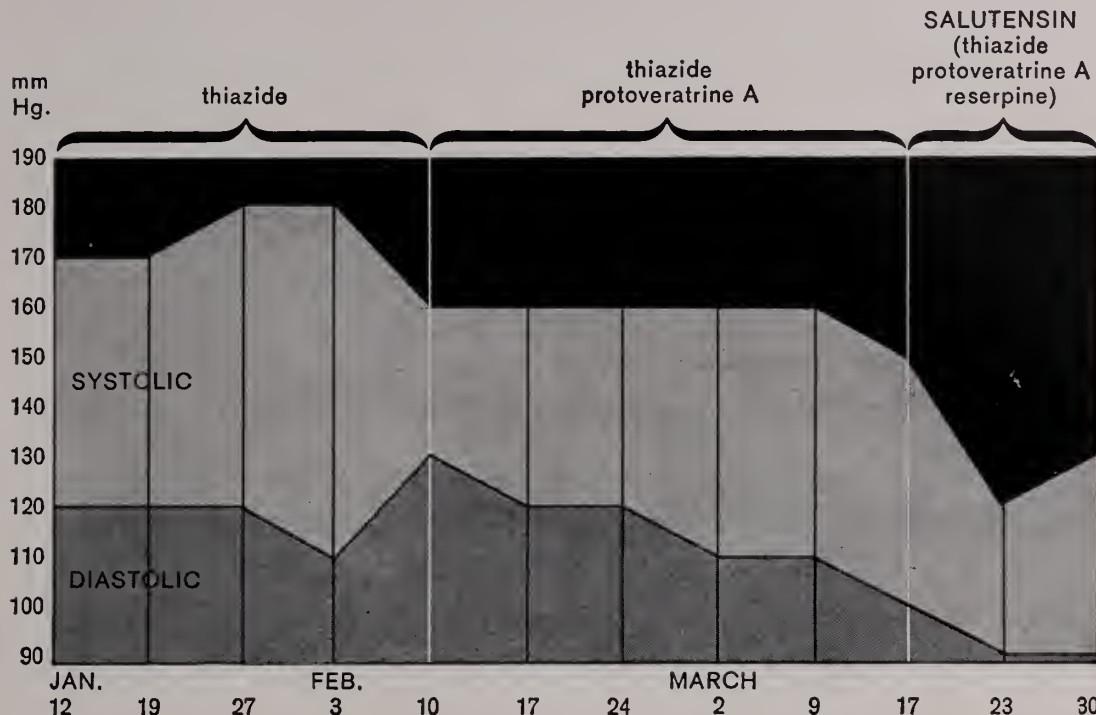
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**References:** 1. Fries, E. D.: In Hypertension, ed. by J. H. Moyer, Saunders, Phila., 1959 p. 123.  
2. Fries, E. D.: South M. J. 51:1281 (Oct.) 1958. 3. Finnerty, F. A. and Buchholz, J. H.: GP 17:95 (Feb.) 1958. 4. Gill, R. J., et al.: Am. Pract. & Digest Treat. 11:1007 (Dec.) 1960. 5. Brest, A. N. and Moyer, J. H.: J. South Carolina M. A. 56:171 (May) 1960. 6. Wilkins R. W.: Postgrad. Med. 26:59 (July) 1959. 7. Gifford, R. W., Jr.: Read at the Hahnemann Symp. on Hypertension, Phila. Dec. 8 to 13, 1958. 8. Fries, E. D., et al.: J. A. M. A. 166:137 (Jan. 11) 1958. 9. Ford, R. V. and Nickell, J.: Ant. Med. & Clin. Ther. 6:461, 1959.

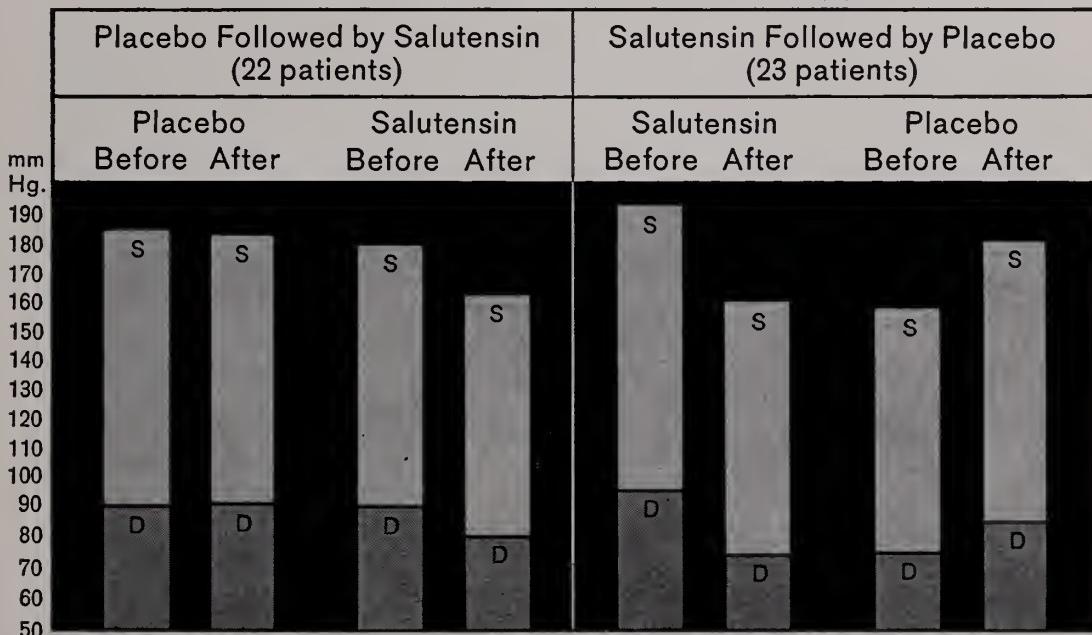
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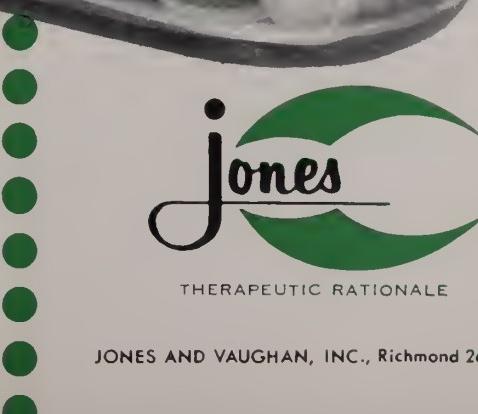
A name that is not suggestive to your patient of therapeutic use

The first flavored sedative  
antispasmodic tablet  
that can be **CHEWED**  
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allowed to **DISSOLVE**  
in the mouth.



EACH SCORED, MINT-FLAVORED TABLET CONTAINS:

Phenobarbital (Barbituric Acid Deriv.)	20.0 Mg.
WARNING: MAY BE HABIT FORMING	
Hyoscyamine Hydrobromide	0.134 Mg.
Hyoscine Hydrobromide	0.0081 Mg.
Atropine Sulfate	0.02 Mg.



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1. Ford R A, and Blanchard, K. Journal Lan et 78 185, 1958

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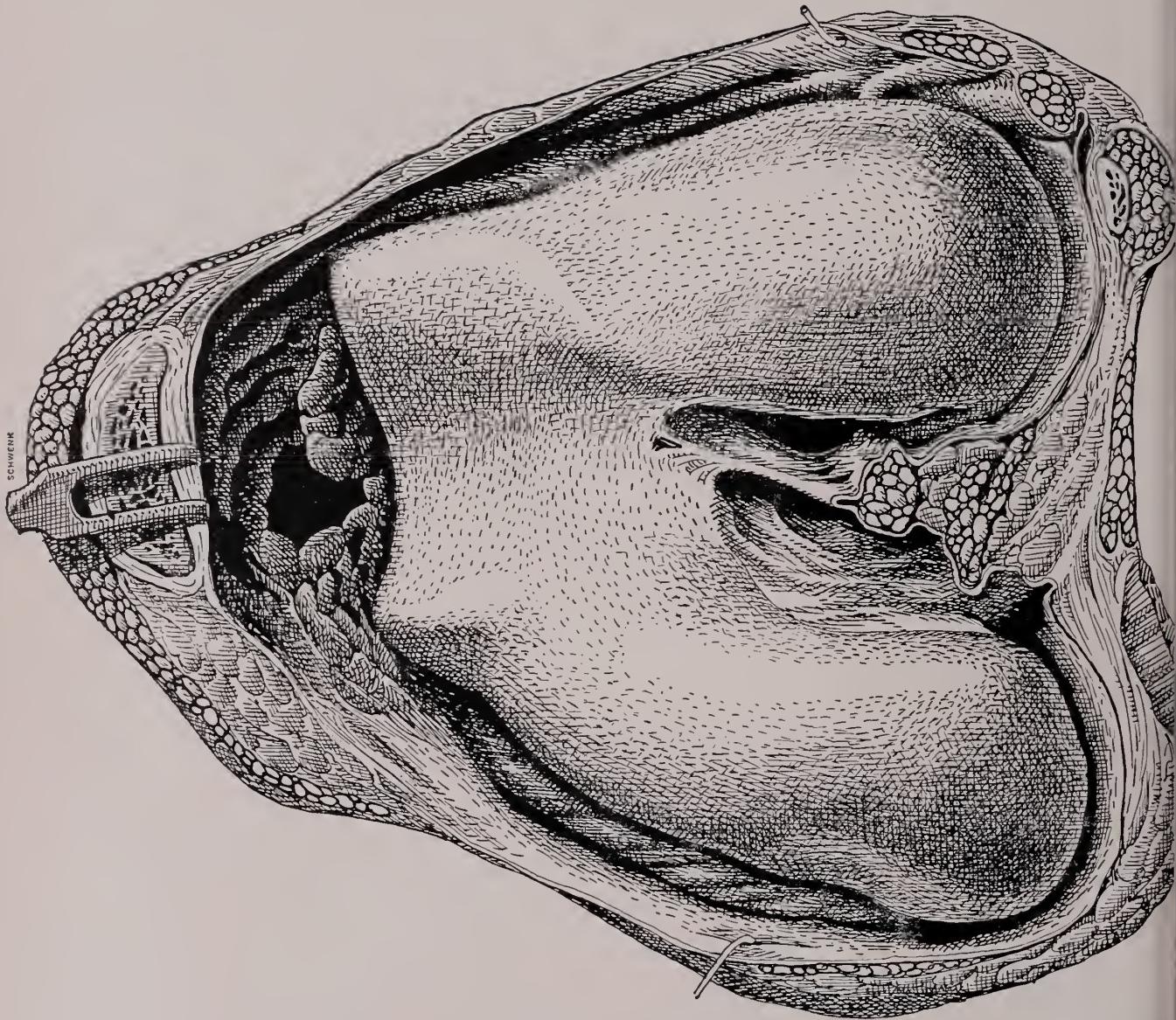
arthritis — and  
osteoporosis

arthritis — and  
hypertension

arthritis — and  
hyperglycemia

arthritis — and cardiac  
insufficiency





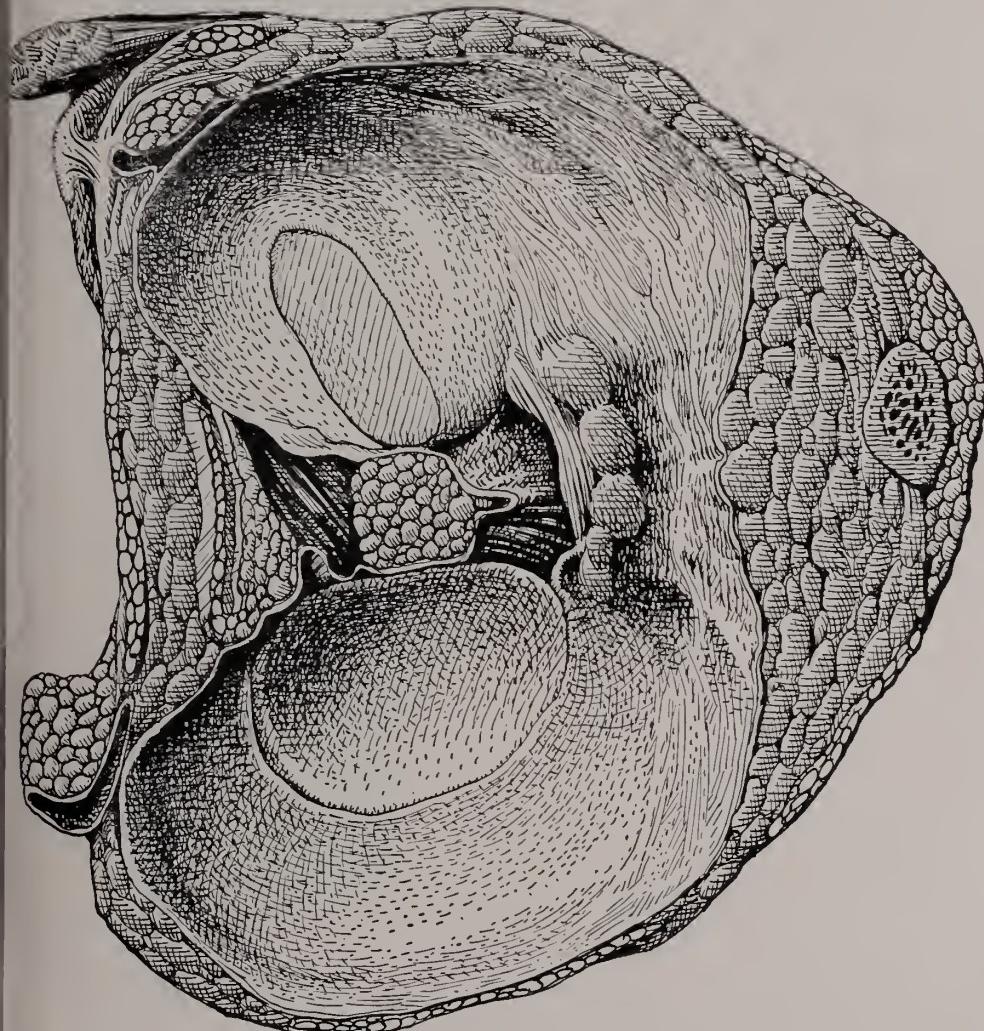
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(Knee Joint, Left: distal end of femur; Right: proximal end of tibia)

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satisfactory results in 88% of cases

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**Supplied:** 400 mg. scored tablets, 200 mg. sugar-coated tablets; bottles of 50. Also as MEPROTABS®—400 mg. unmarked, coated tablets; and in sustained-release capsules as MEPROSPAN® 400 and MEPROSPAN® 200 (containing respectively 400 mg. and 200 mg. meprobamate).

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in over 750  
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3 Los Angeles Cty. Gen. Hosp.  
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5 Port Huron +  
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Panalba combines tetracycline (for its breadth of coverage) and novobiocin (for its unique effectiveness against staph).

That is why, in most infections of unknown etiology, when you use Panalba as your antibiotic of first resort, your treatment offers excellent chances for therapeutic success.

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## Panalba\* product information

**Supplied:** Capsules, each containing Panmycin Phosphate (tetracycline phosphate complex), equivalent to 250 mg. tetracycline hydrochloride, and 125 mg. Albamycin,\* as novobiocin sodium, in bottles of 16 and 100.

**Usual Adult Dosage:** 1 or 2 capsules three or four times a day.

**Side Effects:** Panmycin Phosphate is well tolerated clinically and has a very low order of toxicity comparable to that of the other tetracyclines. Side reactions are infrequent and consist principally of mild nausea and abdominal cramps.

Leukopenia has occurred occasionally in patients receiving novobiocin. Rarely, other blood dyscrasias including anemia, pancytopenia, agranulocytosis and thrombocytopenia have been reported. In a recent report it was observed that three times as many newborn infants receiving novobiocin developed jaundice as control infants. For this reason, administration of novobiocin to newborn and young infants is not recommended, unless indication is extremely urgent because of serious infections not susceptible to other antibacterial agents.

The development of jaundice has also been reported in older individuals receiving Albamycin. Serious liver damage has developed in a few patients, which was more likely related to the underlying disease than to therapy with novobiocin. Although reports such as the above are rare, discontinuance of novobiocin is indicated if jaundice develops. If continued therapy appears essential because of a serious infection due to microorganisms resistant to other antibacterial agents, liver function tests and blood studies should be performed frequently, and therapy with novobiocin stopped if necessary.

In a certain few patients treated with this agent, a yellow pigment has been found in the plasma. The nature of this pigment has not been defined. There is evidence that it may be a metabolic by-product of novobiocin, since it has been reported to be extractable from the plasma (pH 7 to 8.1) with chloroform while bilirubin is not. These properties have been employed to differentiate the yellow pigment due to the metabolic by-product of novobiocin and bilirubin. However, recent reports indicate that this method of differentiation may be unreliable.

Urticaria and maculopapular dermatitis have been reported in a significant percentage of patients treated with Albamycin. Upon discontinuance of the drug, these skin reactions rapidly disappeared.

**Warning:** Since Albamycin possesses a significant index of sensitization, appropriate precautions should be taken in administering the drug. If allergic reactions develop during treatment and are not readily controlled by antihistaminic agents, use of the product should be discontinued.

Total and differential blood cell counts should be made routinely during the administration of Albamycin. If new infections appear during therapy, appropriate measures should be taken; constant observation of the patient is essential. If a yellow pigment appears in the plasma, administration of the drug should be continued only in urgent cases, and the patient's condition closely followed by frequent liver function tests. In case of the development of liver dysfunction, therapy with this agent should be stopped.

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Detergent, mucolytic, antibacterial, penetrating . . . qualities that establish Trichotine as a leading vaginal cleanser—both as a therapeutic measure unto itself, and as a cleansing adjunct to therapy.<sup>1-3</sup> A detergent, Trichotine penetrates the rugal folds, removes mucus debris, vaginal discharge, and cervical plugs.<sup>1-4</sup> Surface tension is 33 dynes/cm. (vinegar is 72 dynes/cm.). Trichotine relieves itching and burning—is virtually non-irritating—leaves your patient feeling clean and refreshed. It establishes and maintains a normal, healthy vaginal mucosa in routine vaginal cleansing, as well as in therapy. Whenever you think of a vaginal irrigant, think of the detergent cleansing action of Trichotine.

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1. Stepto, R. C., and Guinant, D.: J. Nat. M.A. 53:234, 1961. 2. Karnaky, K. J.: Medical Record and Annals 46:296, 1952. 3. Folsome, C. E.: Personal Communication. 4. MacDonald, E. M., and Tatum, A. L.: J. Immunology 59:301, 1948.

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1. King, J. C.: Int. Rec. Med. 172:669, 1959. 2. Weiner, L. J., and Bockman, A. A.: Sci. Exhibit, A.M.A., Ann. Meet., New York City, June 26-30, 1961.

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SEE "IN BRIEF" ON THE NEXT PAGE.

IN BRIEF

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1. Hodges, F. T.: *GP* 14:86, Nov., 1956.

2. Guild, B. T.: *Arch. Dermat.* 51:391, June, 1945.

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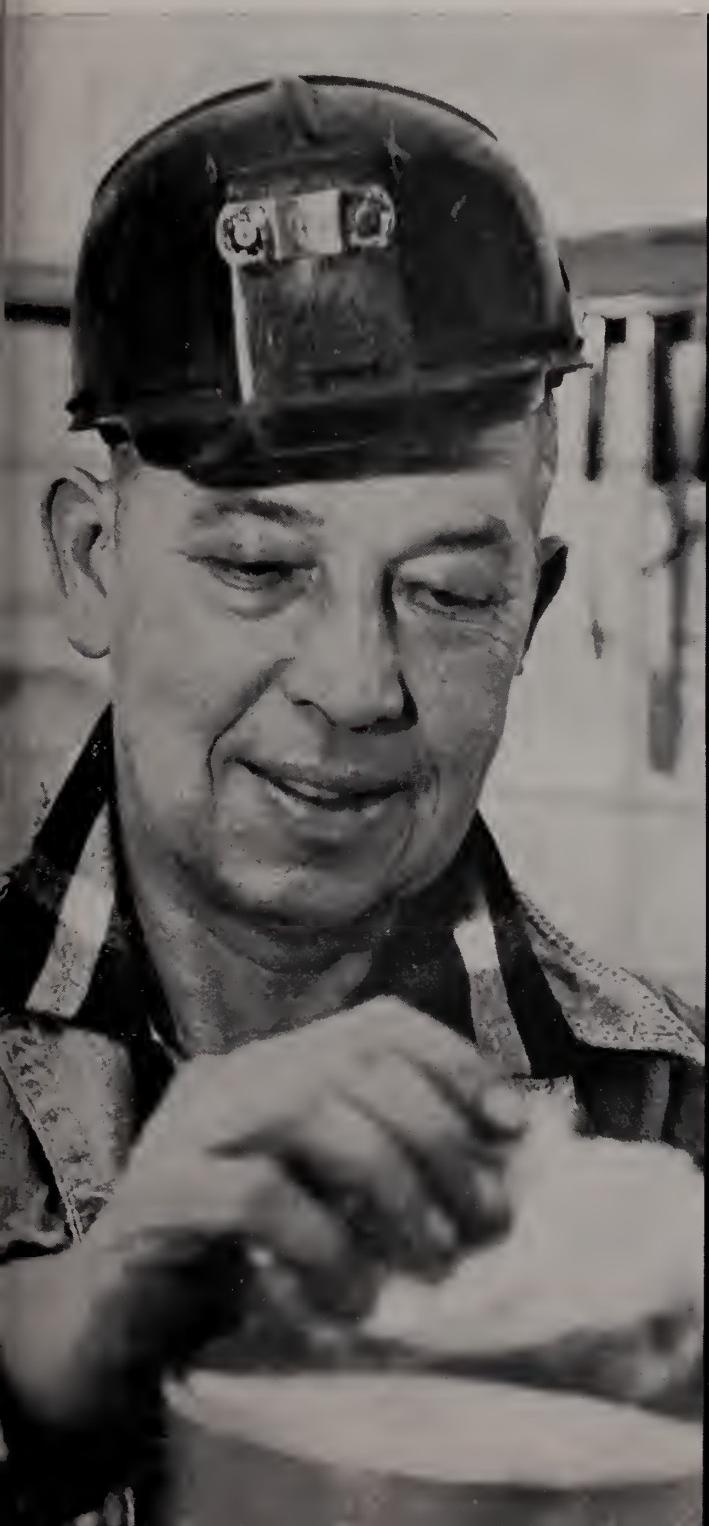
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# *The Virginia* MEDICAL MONTHLY

May, 1962

VOL. 89, No. 5  
Whole No. 1320

## Guest Editorial . . .

Get the Picture?



**T**HREE'S the picture, just as our news section took it off the wires last week. Those are doctors there in the sunlight, lined up solidly behind the President's social security medicare plan, braving the vicissitudes of the American Medical Association like Mt. Rushmore in a gale. We were momentarily impressed too, until we started delving into the backgrounds of these men who happened to call upon the President one afternoon.

That's Dr. Caldwell B. Esselstyne, brooding in the middle of the picture, who led the group of twenty-seven doctors supporting government medicine. After an initial career begun at public charity hospitals such as the Free Hospital for Women in Brookline, Massachusetts, and Bellevue in New York City, Dr. Esselstyne settled down into the Rip Van Winkle Clinic in Hudson, N. Y.

Peeking past his ear is Dr. Alfred Gellhorn, who holds a nice salaried position as a Professor at the Columbia University College of Physicians and Surgeons. And at the far edge, with the distinguished silver brush cut, is Dr. Martin Cherkasky, who teaches administrative medicine at Columbia and is an administrator in several hospitals and city and State public health commissions.

In fact, none of the members of this spontaneous committee, self-appointed to lead the groundswell of doctors for the King-Anderson bill, could be found in private practice. None.

But they were engaged in other activities. One was chairman of the platform Committee on Health at the past Democratic Convention. Another had organized a "Committee of Physicians" for Kennedy during the 1960 campaign. Seven had already testified before Congress in support of the Administration plan.

Four others are officials of "citizens' groups" which have overnight mushroomed up in a fairy ring around the medicare proposal. Three are employed by international unions which support the plan; two are New York City employees of Mayor Wagner who regards the plan as sufficiently left-wing to get the New York City vote. Still another is director of a hospital supported entirely by U. S. funds.

It is surely not entirely candid to trot out the old stable of Administration and socialized medicine stalwarts and proclaim that they represent a significant change in the climate of medical opinion. We're going back to the American Medical Association's estimate that 90 per cent of the country's 271,000 physicians favor the Kerr-Mills plan, which more and more States are putting into effect to help the elderly people who need help.

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Editorial reprinted with special permission from The Richmond News Leader, April 5, 1962.

See Letters to the Editor under CORRESPONDENCE on page 315 of this issue.

# Significance of the Physiological and Clinical Aspects of Steroid Induced Ulcers

J. D. MARTIN, JR., M.D.  
JENNINGS M. GRISAMORE, M.D.  
JOHN L. BROCKMAN, M.D.

*Steroid administration may be complicated by the development of ulcers in the upper gastrointestinal tract. The magnitude of this danger should be considered by all who use these hormones.*

I GREATLY APPRECIATE the honor of presenting this, the Fifteenth Annual J. Shelton Horsley Lecture. To Dr. Horsley's numerous students and associates, it is needless to recount the important contributions which he made to the development and the promotion of his profession. To those not so privileged, brief reflection upon their scope is befitting.

Dr. Horsley was an untiring worker. His keen, analytical, and scientific mind approached every problem with enthusiasm and interest, which were sustained throughout his life. Many phases of surgery have benefited from his prolific writings. The countless honors bestowed upon him were accepted with humility and dignity, and these were so richly deserved because in his search for truth, he never spared himself. His beneficent efforts to promote the cause of science and the welfare of his fellowmen has brought esteem to his profession, and has bequeathed a proud heritage to his family.

From the Joseph B. Whitehead Department of Surgery, School of Medicine, Emory University, Atlanta, Georgia.

Presented before the Richmond Academy of Medicine, April 25, 1961. (J. Shelton Horsley Lecture)

To such a person we pay tribute, and in so doing, acknowledge the debt to our predecessors, hoping that we may be imbued with their pioneer spirit and courage to face the challenges of both the present and the future.

There has always been concern about the role of stress in the production of peptic ulcer. Since 1949, however, when Phillip Hench<sup>1</sup> reported the value of the steroids in treating rheumatoid arthritis, there has been a new approach. Specific lesions have developed which differ in characteristics from those of the ordinary peptic ulcer. Modern treatment of disease with steroids has become increasingly significant in controlling the infections which were unresponsive to available measures. Rheumatoid arthritis, chronic asthmatic states, ulcerative colitis, and some of the intractable skin lesions are in this category. Consequently, a large number of patients seen by most practitioners could possibly be placed on steroids. The natural tendency is to expand the range of indication by treating with corticoids those individuals who are refractory to other forms of treatment.

It can be said that there is no clear understanding of the patho-physiologic mechanisms involved, although evidence implicates more than one factor in the production of peptic ulcers. Some doubt the existence of steroid induced ulcers, contrary to the volume of increasing evidence. It has been estimated that incidence in the population varies from 5-10 per cent.<sup>2</sup> Surprisingly, patients undergoing steroid treatment will show variable frequency in development, and differences too are encountered in individuals with specific diseases. For example, it is estimated

that 4.5-6.8 per cent of patients with rheumatoid arthritis who have not been treated with steroids have peptic ulcer. The range is from 11-31 per cent in those so treated. Kammerer<sup>3</sup> has concluded that the risk of ulcer in rheumatoid arthritis is increased 15

times in men, and 43 times in women, following administration of steroids.

It has been shown that salicylates produce effects comparable to those in the steroid induced ulcer.<sup>4</sup> Prolonged use of aspirin and similar drugs creates a climate for develop-



Fig. 1. Roentgenogram of barium enema demonstrating fistula between transverse colon and stomach.

times in men, and 43 times in women, following administration of steroids.

Instance of peptic ulcer in patients with ulcerative colitis is modified, and for some reason, occurrence during steroid treatment is less frequent. The possible beneficial factors are that patients are hospitalized and consequently more carefully observed, and from a nutritional standpoint, more meticulous

management of ulcer. As is known, the local irritating action and the systemic changes are both incriminated. No definite causal relationship has been established concerning the role of salicylates when ulcers develop during treatment for rheumatoid arthritis.

Differences between stress ulcers, seen in burns or other trauma, may be unremarkable.<sup>2</sup> The majority of the lesions, including

those following brain surgery, are gastric in location, although they may appear elsewhere in the gastrointestinal tract. Those who have had ulcer diathesis tend to greater exacerbation than patients without stress who have not received steroids. Although prednisone and prednisolone require smaller doses than cortisone, there is little difference in instance, or in characteristics. In some patients peptic ulcer develops early, while in others, adverse effects may not be perceived for months. The size of the dose apparently affects neither extent nor severity of the lesions.

Often, onset and manifestation of symptoms are silent and full significance may not be appreciated until severe and frequently disabling complications appear. Surgical consideration then becomes important, since difficulty may arise in differentiation of the acute abdomen and those ulcers presenting massive gastrointestinal hemorrhage. Reduction of pain perception, lack of exudative response, and increased secretion may explain delayed symptoms following prolonged administration of steroids.

Bleeding, perforation, and complete intractability, regardless of ulcer location, may be expected once symptoms have been noted. The pathological characteristics of these lesions are quite distinct. Whether single or multiple, their soft, pliable nature speaks for the failure of normal reparative response. Rubbery consistency and lack of fibrotic base in the peripheral tissue are significant to the extent that healing can be expected without much evidence of scarring. With symptoms not sufficiently manifest, late recognition may be attributed to these findings. The steroid ulcer will heal as well as other wounds, but with a delay. In the progressive lesion, healing may not occur, and the more unfortunate individuals may meanwhile develop disabling complications.

Gray and associates<sup>5</sup> reported that administration of adrenocorticotrophic hormone over a period of weeks increased the basal and the nocturnal secretion of HC1 and pepsin by approximately 200 per cent, and

produced an associated rise in uropepsin excretion. These studies also revealed that patients who developed epigastric distress during treatment, or who showed signs of the ulcer diathesis, manifested an increase in uropepsin excretion and in gastric acid and pepsin secretion within the range normally seen in an ulcer. Hirschowitz<sup>6</sup> reports similar results during corticotrophin therapy. The uropepsin and the plasma pepsinogen remained normal until symptoms of ulcer were experienced, when their values appreciably increased.

Gray<sup>5</sup> demonstrated that in removal of the gastric antrum, and following vagotomy, neither probanthine nor atropine appeared to change the gastric acidity and the uropepsin response to adrenal stimulation to stress. However, stimulation of the hypothalamus produced an increase in uropepsin excretion. Patients with hypopituitary function, or with hypoadrenal function (Addison's disease) demonstrated low uropepsin excretion. On the other hand, those with excess adrenal and pituitary activity demonstrated an increase in the uropepsin excretion. This led to the conclusion that the gastric response to stress is mediated through the vagus nerve, and through the possible additional hormonal mechanism which is eventually a part of the function of the adrenal gland. Accordingly, chronic emotional and physical stress may stimulate the stomach to secrete increased acid and pepsin by way of a mechanism which involves the hypothalamus, the pituitary, and the adrenocortical axis. This seems to function independently of the vagus nerve and the gastric antrum. It has been emphasized that chronic adrenal stimulation for ten days or more is necessary to increase the secretion of gastric acid and/or pepsin.

In a report by Dreiling and associates<sup>7</sup> opposition to this concept was found, contending that there had been failure to produce an increase in both the total and the free acid in the flow of gastric juices. There was also failure to increase pepsin secretion after a period of six hours administration of

hydrocortisone, ACTH and meticortelone to 55 patients with and without the ulcer diathesis. It has been emphasized, however, that a six hour administration is insufficient time to produce effect;<sup>1</sup> as is seen in chronic stimulation, a longer period must be allowed for these manifestations.

Kammerer and co-workers<sup>3</sup> obtained an increase in pepsin and HC1 secretion in 14 normal volunteers who were administered hydrocortisone, prednisone and prednisolone over a period of two weeks. This would appear to be of significance in the genesis of peptic ulcer. The relationship of stimulation on the one hand, and of Cushing's disease on the other, confirms the contention that there are more than average increases in acid pepsin and uropepsin during ACTH and cortisone administration. The time elements and the variability between the agents show considerable discrepancy in the subjects treated.

Administration of ACTH to normal individuals over a period of 3-4 weeks produces marked increase in basal and nocturnal secretion of acid and pepsin. In every instance, if an individual had had a previously active duodenal ulcer, there was uniform increase in acid, secondary to this ulceration. The same effects produced by ACTH have been borne out in administration of cortisone. Mixed effects can be expected to appear after 7-14 days continuous administration. This coincides with the duration of the corticotropin or cortisone therapy which precedes the reactivation, perforation, and/or hemorrhage of the ulcer. Dragstedt and others<sup>8</sup> question this opinion, since they were unable to demonstrate increased gastric secretion in the human after steroid administration. These observations were also confirmed in the guinea pig treated for a one month period.

In dogs, it has been found that administration of 75 mg. of ACTH daily for a 7-12 day period, increased the acid output from 19-44 per cent above the control values; and that 100 mg. of cortisone daily increased the total hydrochloric acid output from 35-70 per cent. Drye and Schoen,<sup>9</sup>

using dogs with Heidenhain pouches, administered 25 mg. of cortisone daily for one month, and found no change in the hydrochloric and pepsin output. They furthermore stated that no change occurred in the human subjects who received intramuscularly 100 mg. of cortisone daily for one month. The data are somewhat confusing but may be indirectly significant through other approaches than those to which attention is directed.

Cummins<sup>10</sup> was unable to demonstrate with ACTH stimulation that there was any adrenocortical abnormality. Krakauer<sup>11</sup> has confirmed these findings, and saw no increase in uropepsin and in 17-ketosteroid excretion. It was interpreted that in basal conditions, the stomach acted autonomously; and that in ACTH administration, gastric secretory activity came more directly under adrenal dominance. At present, evidence is against any adrenal hypersensitivity or hyperfunction in human patients with gastric ulcer.

Observations have been made on the secondary factors, such as increased viscosity of gastric juice; decrease of mucus on the surface of the gastric mucosa; and lack of cellular resistance. Kammerer has pointed to similar experience and feels that these effects could be secondary to those which he and co-workers described as being related to the acid and pepsin secretion. To support these possible factors, Denko<sup>12</sup> has suggested that a protective mechanism is interfered with by administration of steroids. Cortisone is thought to inhibit the incorporation of radioactive sulfur into mucin and it was postulated that the mucus production may be similarly disturbed. No doubt, there are also factors such as gastric motility, tissue resistance, vascular influences, and others, which are significant and will aid in clarifying this issue.

Janowitz and co-workers<sup>13</sup> found that cortisone does not affect re-epithelialization of gastric mucosa previously destroyed by chemical agents. However, there is prolongation of the period required for healing of these man-produced ulcerations. It has

been demonstrated that in the hypophysectomized rat,<sup>14</sup> the produced ulcer may be expected to normally heal, but, with the administration of steroids, perfect healing can be expected in only 50 per cent. It can be anticipated that the unhealed ulcers will erode and perforate, as seen in the human. Perhaps the greatest significance lies in that there is prolongation of the period of healing, but no interference with formation of the fibroplasia.

Many manifestations have been reported from long term steroid therapy. Cataracts<sup>15</sup> were seen in 17 patients of a series of 44 who were being treated for rheumatoid arthritis. This is extremely interesting, as no increased cataract formations occurred in patients undergoing non-steroid treatment for arthritis. Further relation of these lesions to gastrointestinal changes cannot be established.

Meakin and others<sup>16</sup> have noted that in long term steroid therapy, pituitary function may recover more rapidly than adrenocortical function. It was suggested that after prolonged therapy some of the side reactions may include local gastrointestinal effects which might be related to the induced ulceration.

Butterfield and associates<sup>17</sup> reported at the recent meeting at the Fundamental Forum of the American College of Surgeons, that alteration of tissues occurred in the cat's esophagus after cortisone, when it was perfused with gastric secretion. No change was noted when the esophagus of the cat not given cortisone was perfused with gastric contents. It was interpreted that cortisone produces peptic esophagitis in the perfused cat's esophagus by its local action on the tissues, rather than by gastric acid pepsin increase.

Although not entirely clear, the data are sufficient to substantiate that the clinical entity which has developed is related to the use of the steroids. Mechanisms involved may be fully understood after further investigation and experience.

The second phase of this presentation is to report a group of cases which have been

treated within the last year. They show that certain trends can be emphasized in the evaluation, and point to the pattern to be expected in individuals on prolonged steroid therapy. The following is an exaggerated example, but it presents the magnitude of the problem with which the clinician must cope.

### Case Report

A 58-year-old female gave a long history of rheumatoid arthritis, for which she had taken large amounts of an unknown variety of steroids for two years, without supervision of a physician. Two months before admission, severe substernal and epigastric pain developed, which was thought to be due to a myocardial infarction. Protracted diarrhea and weight loss developed six weeks before admission, without evidence of previous gastrointestinal symptoms. A barium enema showed the barium to pass to the transverse colon and then through a fistula into the stomach. After preparation, exploratory laparotomy was performed. At operation, two large ulcers of the stomach were found, one of which had eroded through the mid-portion of the posterior wall into the anterior mid-transverse colon. These were resected and continuity of the bowel was re-established. The postoperative course was satisfactory; however, the patient continues to have considerable difficulty with arthritis.

### Experimental Data

The final phase of this presentation is to summarize our experiences with administration of large doses of cortisone acetate to a group of rabbits for periods up to as long as two months: (1) to determine the survival; and (2) to determine the effect of the healing of the sutureline following gastric resection.

Experiments were in three parts. In the first part, relatively normal doses of cortisone acetate (0.5 mg. per kilogram body weight) were administered for five weeks.

Gastric resections were performed and observations on the healing of the stoma were noted. The degree of response at various periods was studied, both for the local effect and for the tensile strength of the anastomoses. The latter was determined by measuring the weight required to disrupt the sutureline.

The second and third parts consisted of more critical experiments. To produce immediate and more prolonged changes, larger doses of cortisone were given. These were administered in two groups: one group received 10 mg. of cortisone for one week. Many rabbits exhibited cortisone effect, noted by polyserositis, pulmonary edema, congestion of the lungs, and in instances, petechial hemorrhages.

The other group were administered 24 mg. of cortisone for as long as two months. Many rabbits died soon after beginning treatment, while others survived the two

months. Upon operation, death occurred from the effects of the anesthesia, or from the immediate operation, regardless of the type and the magnitude.

Rate of healing was noted to be definitely prolonged in rabbits administered either small or large amounts of cortisone. Although fibroplasia and complete healing will occur, there is delay, if not eventual impairment. No gastrointestinal hemorrhages occurred, but peritonitis was noted when disruption of the sutureline existed.

Although these experiments add little to pertinent information concerning development of ulcers of the steroid type, they demonstrate some of the local gastrointestinal effects to be expected in individuals who are subjected to prolonged steroid therapy. They may be related to local edema and to general water and salt retention, as well as to other changes which occur at the local anastomotic site.

#### STEROID ULCERS

MAJOR SYMPTOM	Number	Number Requiring Operation	Improved With or Without Operation	DEATHS		Percentage Mortality Directly Related to Steroid Ulcer
				Directly Related	Not Related	
Pain.....	14	1	12	.....	2	0
Perforation.....	3	3	1	2	.....	66.7
Hemorrhage.....	14	4	10	3	1	21.4
Obstruction.....	2	2	2	0	0	0
None.....	1	0	0	0	1	0
Total.....	34	10	25	5	4	14.7

Fig. 2. Chart demonstrating major symptoms and mortality associated with these patients.

#### PRIMARY DISEASE

PRIMARY DISEASE PROCESS	Number	Average	PERCENTAGE		Deaths
			Males	Females	
Arthritis.....	19	58.5	52.7	47.3	2
Ulcerative Colitis.....	2	47.0	50	50	1
Obstructive Emphysema....	3	65.0	100	0	2
Asthma.....	1	37.0	0	100	0
Carcinoma Palliative.....	3	50.7	67.7	33.3	3
Addison's Disease.....	1	41.0	0	100	0
Leukemia.....	1	3.5	0	100	0
Vasculitis.....	1	50.0	100	0	0
Miscellaneous.....	3	44.0	66.7	33.3	1
Total.....	34	53.4	55.9	44.1	9

Fig. 3. Chart demonstrating primary disease and age of patients treated.

Previous information relative to these findings has been reported. Daugherty<sup>18</sup> noticed in mice that the first change was the destruction of fibroblasts in the inflamed areas. In the use of cortisone and Com-

GROUP I  
CONTROL—NO STEROID TREATMENT

Rabbit Number	RESULTS
1.	No Complications
2.	No Complications
3.	No Complications
4.	No Complications
5.	No Complications
6.	No Complications
7.	Death 12th Post-Operative Day—Rupture of Suture Line—Large Hair Ball in Stomach

Fig. 4. Chart of control animals following resection of the stomach.

GROUP II

EFFECT OF 10 MG OF CORTISONE ACETATE I.M.  
FOR 7 DAYS PRE-OPERATIVE AND UP TO 14 DAYS  
POST-OPERATIVE

Rabbit Number	
1.	Death—3rd Post-Operative Day—Leak at Anastomotic Site and Peritonitis
2.	Death—9th Post-Operative Day—Leak at Angle of Anastomosis—Peritonitis
3.	No Complication
4.	No Complication
5.	No Complication
6.	No Complication

Fig. 5. Chart demonstrating effect of short term pre-operative and post-operative administration of Cortisone Acetate.

GROUP III

EFFECT OF 25 MG CORTISONE ACETATE I.M. DAILY  
FOR 1 WEEK PRE-OPERATIVE AND UP TO 14 DAYS  
POST-OPERATIVELY

Rabbit Number	
1.	Death—2nd Post-Operative Day—Leak at Anastomosis
2.	Death—3rd Post-Operative Day—Leak at Anastomosis
3.	Death—3rd Post-Operative Day—Leak at Anastomosis
4.	No Complication
5.	No Complications
6.	No Complications

Fig. 6. Chart demonstrating short term administration of 25 mg Cortisone Acetate noting suture breakdown with leak of anastomosis.

pound F, which inhibit the inflammatory response, there are two factors to be considered, namely: (1) the strength of the stimulus; (2) the inverse proportion of the amount of concentration of cortisone at the site of the inflammation.

Popert and others<sup>19</sup> conclude that healing can be altered by steroids under the following circumstances:

1. Healing will occur normally in patients who appear normal.
2. Patients who show features of Cushing's disease may heal poorly.
3. When rounding of the face exists, but

COURSE OF 7 RABBITS GIVEN 25 MG CORTISONE ACETATE DAILY FOR TWO TO FIVE MONTHS WITH NO SURVIVALS

Rabbit Number	CAUSE OF DEATH	Time of Death
1.	Cortisone Effect.....	2 Months
2.	Cortisone Effect.....	3½ Months
3.	Nembutal Anesthesia..... Autopsy—Liver Enlarged and Massive Fluid	5 Months
4.	Lobar Pneumonia.....	4th P. O. Day
5.	Pleural Fluid and Lobar Pneumonia.....	2nd P. O. Day
6.	Acute Gastric Dilatation Secondary to Angulation of Anterior Loop Suture Line Intact.....	
7.	Acute Perforation of Suture Line.....	1st P. O. Day 1st P. O. Day

Fig. 7. Chart demonstrating the course of prolonged administration of Cortisone to a rabbit.

TENSILE STRENGTH OF ANASTOMOSIS

Grams of Water Animal Control	Following Administration of 25 Mg of Cortisone One Week Before and for at Least Two Weeks Post-Operative
C-1 393	E-1 59
C-2 267	E-2 134
C-3 272	E-3 75
C-4 292	E-4 75
C-5 490	E-5 32
C-6 282	E-6 150
C-7 244	E-7 160
C-8 240	E-8 62
C-9 216	E-9 134
	E-10 36

Number of Grams of Water Necessary to Separate the Anastomosis

Fig. 8. Chart demonstrating the weight in grams required to produce disruption of the anastomosis following short term administration of Cortisone Acetate.

no other symptoms are present, healing can occur normally, provided these patients do not have anemia, severe wasting, or gross abnormality of the plasma protein level.

Calnan<sup>20</sup> feels that there is a local depression of connective tissue reactivity brought about by impairment of vascularization, fibroblastic proliferation, and inflammatory exudation of serum and cells.

### Summary

1. Contrary to differences of opinion, it is now well established that following administration of steroids, the development of ulcerations is definitely increased.

2. The possible mechanisms involved in the development of the pathophysiologic changes are discussed. There is, perhaps, more than one factor of significance.

3. Increase has been noted in patients who undergo steroid therapy for rheumatoid arthritis, as compared to other conditions.

4. The magnitude of the problem is confirmed by the fact that in the last year, 34 patients with severe manifestations were treated. These varied among intractability, hemorrhage, and frequently, perforation. Mortality for this group was 14.7 per cent.

5. In view of the severity of the complications, all patients being considered for steroid therapy should first be carefully screened for previous ulcer disease. The patients selected must meet rigid requirements and must be carefully followed to detect any suggestion of ulcer. Even then, those receiving treatment should be apprised of the calculated risk.

6. Experimental data are presented which confirm previous reports that healing of a surgical wound occurs in the rabbit with some delay; fibroplasia is slow forming; and tensile strength of the sutureline is impaired. Definite ulcerations were not noted, and hemorrhages were not seen when massive doses of cortisone acetate were given.

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### New Therapy for High Blood Pressure

A new type of drug was reported to have effectively reduced high blood pressure in 31 of 33 severe cases.

Alpha-methyl DOPA (dihydroxyphenylalanine) was found to be "a palatable oral medication useful in treating patients with severe hypertensive disease," Drs. Paul J. Cannon, Robert T. Whitlock, Marielena Angers and John H. Laragh, New York City, and R. Curtis Morris, San Francisco, said in the March 3rd *Journal of the American Medical Association*.

The mode of action of the drug has not as yet been fully defined. However, it is believed to affect one of the hormones secreted by the adrenal glands, norepinephrine, which has been linked to the development of high blood pressure.

The drug is a derivative of DOPA, one of the body's naturally occurring amino

acids involved in the chemical formation of norepinephrine.

Unlike some drugs used to lower blood pressure, alpha-methyl DOPA produced few side effects. The drug also was found to lower blood pressure in patients with kidney damage without apparently producing further kidney deterioration.

Due to its potency and rapid action, the drug was useful in the emergency treatment of sudden, acute episodes of high blood pressure involving the brain (hypertensive encephalopathy).

The study did not indicate whether the drugs altered the natural course of the disorder because it did not include a comparison of treated and untreated patients. However, the findings warrant further investigation.

# Pilocarpine Iontophoresis as a Method of Obtaining Sweat For Electrolyte Determinations

## A Preliminary Report

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*The diagnosis of cystic fibrosis can be made rapidly and accurately by determining the electrolyte content of sweat. Pilocarpine iontophoresis is a safe, simple means of collecting sweat for this test.*

DR. PAUL A. DI SANT'AGNESE has declared that sweat electrolyte tests should be performed routinely on all infants with malabsorption syndrome or chronic pulmonary disease as a means of rapidly diagnosing cystic fibrosis.<sup>1</sup>

The determination of sweat electrolytes has proved to be an extremely accurate method for diagnosing cystic fibrosis. Dr. di Sant'Agnese reports that out of a total of 254 patients with cystic fibrosis who had the sweat test performed, only two (0.8%) have presented with sweat electrolytes within the normal range and yet were fully proved to have the disease. In contrast out of a total of 213 patient with cystic fibrosis seen over a period of five years, 34 (16.4%) had either only reduced or normal pancreatic activity.<sup>2</sup> This evidence certainly supports the fact that sweat electrolyte

determinations are more useful as a diagnostic procedure in cystic fibrosis than the often difficult duodenal intubation.

Several procedures for sweat electrolyte tests have been tried with varying degrees of success. One of the earliest was the silver chromate agar screening test. It has been discarded because of a large number of false positive reactions and the problems of mixing and preserving the test material. Furthermore, this was a "screening test" and did not accurately reveal the essential findings of quantity of electrolytes in the sweat.

One successful method of obtaining sweat for chemical analysis was that in which the patient was wrapped in a plastic sheet and covered with a number of blankets. This usually produced large quantities of sweat, often to the degree that the patient was drenched from head to toe. This method was frequently associated with elevation of the body temperature and occasionally the patient required replacement fluids. Because of this, constant supervision by nurses and doctors was necessary. Several similar procedures have been described by other investigators, most recently at a meeting of the Association of Clinical Scientists in Washington, D. C. The generalized body heating associated with these methods has been reported to be a potential threat in infants and the small child because of heat prostration or severe electrolyte disturbances especially in the child with cystic fibrosis. More than six deaths have been reported following this procedure.<sup>3,4</sup>

In March of 1959 Drs. Gibson and

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Cooke from the Johns Hopkins Hospital described a method of pilocarpine iontophoresis for obtaining sweat in infants and children.<sup>5</sup> Shortly after this report we began using this method and have followed their procedure and developed a machine quite similar to theirs. Our laboratory requires 100 mg. of sweat and therefore the procedure takes about fifteen minutes as compared with three to five minutes in those laboratories with micro-techniques.

The instrument used here is basically similar to that developed by the Johns Hopkins group. The following refinements were deemed worthwhile and have been incorporated. The signal and potentiometer circuits were separated to reduce any likelihood of electrical surge being delivered to the patient. A Mallory U. S. 27 switch and Midgetrol potentiometer combination controlled by a button on the instrument cabinet is used to turn on the two circuits and make sure that potential is not delivered too rapidly to the patient. A Shurite 0-5 milliammeter is used to increase reading sensitivity. A 500 ohm padding resistor was installed in series with the patient leads to protect against meter burnout in case of accidental shorting and to integrate any sudden microphonics that might arise in the batteries.

Sanborn silver cardiographic electrodes were cut to approximately 2 x 2 inches with the patient leads soldered directly to the upper electrode surface. This was done to minimize leverage against the electrodes and thus stabilize contact with the patient. Banana jacks connect the leads to the instrument housing to facilitate disconnecting the instrument in case of patient irritability or excitement. A Bud number 3802-2 cabinet complete with carrying handles and luggage clasp houses the instrument and provides extra space over the batteries for storage of electrodes and other equipment when not in use.

This test has been performed successfully on all age groups from infancy to adult-

hood. The advantages of this type of test are:

1. It is painless.
2. Speed: this is especially necessary when surveying the general population for incidence of cystic fibrosis.
3. There is very little impairment of motion of the patient.
4. Safety with no generalized body heating.
5. It is inexpensive.
6. Ready acceptability to parents and older children who would refuse to be enclosed in plastic sheets and blankets.
7. Accuracy.

#### Procedure:

- I. Necessary equipment.
  - A. "Sweat Machine".
  - B. 4cc of 0.05% pilocarpine nitrate.
  - C. Several gauze pads 2 x 2 inches.
  - D. One piece of plastic sheeting, 3 x 3 inches.
  - E. Tape.
  - F. Normal saline.
  - G. 2 x 2 inch gauze pads in a stoppered flask. This gauze is weighed in the stoppered flask and wrapped in a cloth so that neither the gauze nor flask is touched.

Several gauze pads are saturated with 4cc of pilocarpine nitrate and placed on the volar aspect of the forearm or in small infants on the thigh or lower leg. The positive electrode is placed over this material. Several gauze pads are saturated with saline and placed opposite the positive electrode, and on this the negative electrode is placed both being held securely by a band of rubber. The instrument is turned on and slowly advanced until 4 millamps is reached. This part of the procedure takes fifteen minutes. The machine is disconnected, the pads removed, and the volar aspect of the forearm washed with distilled water and wiped dry

with a pad. The gauze pads which have been weighed and placed in a small flask are removed with an instrument without touching the flask or stopper and placed on the arm where the pilocarpine was iontophoresed. This is covered with a small piece of plastic sheeting and the entire area is covered with tape. In one half hour the tape and plastic sheeting are removed; the pads

be quite useful as a rapid and safe means of obtaining sweat electrolytes on persons suspected of being carriers or being heterozygous for the gene of cystic fibrosis. In one study it has been shown that 17% of the parents of patients with cystic fibrosis and 29% of the asymptomatic siblings have increased concentration of chloride in their sweat.<sup>6</sup> It has been stated that as many as



Fig. 1

are picked up with an instrument, replaced in the flask without touching the flask or stopper and returned to the laboratory for weighing. The contents are then checked for chloride. A positive test in our laboratory is one in which the sweat chlorides are greater than 60meq per liter.

All patients previously tested by other techniques were positive by this new method and several new cases have been uncovered. Among the new cases two were in the adult age group. The siblings and children of these adults will be checked by the same method.

#### Comment

Pilocarpine iontophoresis has proved to

one in every sixteen to twenty persons may be heterozygous for the gene for cystic fibrosis.<sup>7</sup> However, because of the varying responses of sweat electrolyte to stress according to the genetic endowment, it should be stressed that in heterozygotes a sweat test may appear to be normal at one time and yet found to be elevated in a different season.<sup>8</sup>

Pilocarpine iontophoresis is a rapid, safe and effective method for checking large areas of the population for cystic fibrosis and the carrier state. It may prove a valuable aid in genetic counseling, but chiefly as a diagnostic aid in cystic fibrosis and an investigative tool in uncovering carriers so that certain aspects of the mildest form of

the disease can be studied and some insight gained into both the quantitative and qualitative defects that become apparent.

More physicians should attempt this test and its ease and importance should be more widely publicized. It has been two years since Drs. Gibson and Cooke described the procedure, and yet reports continue to be published in which the method for obtaining sweat involves marked limitation of the patient's movement and requires generalized body heating with possible unfortunate sequelae.

### Summary

1. The examination of sweat electrolytes appears to be the most accurate test for the diagnosis of cystic fibrosis of the pancreas.

2. Some of the older methods of obtaining sweat for examination have either been merely screening tests or have been uncomfortable and even dangerous to the patient.

3. The pilocarpine iontophoresis method for stimulating sweat is a simple, safe and rapid test which makes it ideal for easy use in single cases or in large study programs.

4. A machine for the collection of sweat is described.

**ACKNOWLEDGEMENT:** The "Sweat Machine" was devised and constructed by Mr. C. R. French, Chief Technician, Department of Physiology, University of Virginia School of Medicine, Charlottesville, Virginia, and was essentially a replica of the machine originally described by Drs. Gibson and Cooke. A commercial unit is now available.

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### The Brand Name Is Here to Stay

I think I am safe in assuming that we do not want socialized medicine, or state medicine, any more than we want to do away our American system of free enterprise. If this be true, then I can assure you that the brand name, or trademark, is here to stay. If you will stop to think about it a moment, you will recognize that our entire system of free enterprise is, in fact, based on brand names. Brand names enable the consumer to reward the product which is proved to

be good—and the reward comes through repurchases of the product. If a product proves to be unsatisfactory, the consumer has the means of punishing it—by refusing to buy it again. And the means is, of course, his ability to identify the unworthy product through the trademark or brand name.—Theodore G. Klumpp, M.D., President, Winthrop Laboratories, to Massachusetts Medical Society.

# Bacteriuria

## A Discussion

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*The colony count per c.c. of cultured urine has been used by some as a test for the presence of pyelonephritis. Here the author discusses the pros and cons of this method.*

BACTERIURIA may be defined as urine which contains 100,000 colonies of bacteria per c.c. This definition was arrived at by Kass<sup>1,2,3</sup> who first postulated the probability that such a condition might exist. The postulation was based on a series of autopsies reported by Jackson, Dallenbach and Kipnis<sup>4</sup> who were comparing the incidence of pyelonephritis in their series with the incidence noted in a series studied by Weiss and Parker in 1939.<sup>5</sup> In the more recent series, it was stated that 20 per cent of the autopsies showed pyelonephritis and only 30 per cent of these were diagnosed clinically. This meant that 14 per cent of all autopsies showed pyelonephritis which was not diagnosed clinically and it was evident that methods other than those generally accepted were necessary to arrive at the diagnosis. It was reasoned that if there were such a condition as bacteriuria, by using it as a criterion in a mass survey of patients, it might serve as a means of discovering the hidden cases. After much painstaking work and many thousands of cultures, it was concluded that 100,000 bacterial colonies per c.c. of freshly collected urine represented bacteriuria.

A population survey was then conducted with the results shown below (Table I).

TABLE I<sup>a</sup>  
OCCURRENCE OF BACTERIURIA IN VARIOUS POPULATION GROUPS AT BOSTON CITY HOSPITAL

6% of 377 females in medical outpatient department  
4% of 192 males in medical outpatient department  
18% of 54 diabetic females in outpatient department  
5% of 37 diabetic males in outpatient department  
8% of 2000 pregnant females making their first prenatal visit  
23% of 52 females with cystocele  
98% of 100 patients with inlying catheters for 96 hours

From this it was concluded that bacteriuria certainly occurred and, if a reasonably constant concomitance could be shown between this new concept and pyelonephritis, then we might well have a valuable and indeed necessary addition to our testing modalities. This correlation was first done by autopsy studies.<sup>6</sup> The bladder urine of one hundred consecutive autopsies was cultured. The bladder was seared and the contents aspirated through the seared area. Table II gives the results. The 85 per cent correlation was most encouraging.

TABLE II <sup>b</sup>	
total autopsies	100
bladders with bacteriuria	40
urinary tracts with active infection	20
urinary tracts with active infection and bacteriuria	17
correlation	17
	$\frac{17}{20} = 85\%$

The next study was to ascertain the correlation between bacteriuria and renal biopsy in the living human. Fifty patients with bacteriuria were subjected to renal biopsy. Seventy-five per cent of these showed pyelonephritis in the biopsy specimen.<sup>7</sup> The detailed results are given in Table III. (As

TABLE III<sup>7</sup>

number of patients with bacteriuria	50
number of biopsies showing normal kidney	10
number of biopsies showing varying stages and degrees of pyelonephritis	28
number of biopsies showing abnormalities without interstitial pyelonephritis	5
number of biopsies showing predominantly vascular changes with variable interstitial inflammation and fibrosis	7
correlation	35 — = 70% 20

can be seen, the actual percentage seems to be 70 per cent rather than 75 per cent.)

With this excellent concomitance, the problem arose as to the practical application of the test. In studying the urines of pregnant women on their first prenatal visit, it was found that eight per cent of 2,000 had symptomless bacteriuria.<sup>8</sup> These 160 women were divided into two groups; one group was given a placebo and the other treated continuously to control the bacteriuria. No case of pyelonephritis of pregnancy occurred in those whose bacteriuria "was controlled", while pyelonephritis occurred in 40 per cent of the placebo treated patients. Here was abundant confirmation of the practical value of the clinical use of the test. It is difficult to conceive of a more beautiful or more logical demonstration of the validity and value of the original postulation.

One minor doubt persisted, however, and that was the problem of just what was meant by the term "symptomless pyelonephritis". Pyelonephritis may be defined as an inflammatory change involving the renal pelvis and parenchyma. The pathologic changes may be grouped as in Table IV.

To most of us the words "inflammatory change" presuppose the presence of bacteria. Where the pathologic changes noted above occur, bacteria are now or have been present. But, in the kidney, this is not true. These changes may be produced in at least one other way without the presence of bacteria. One simply ligates the ureter. Here are the pathologic changes which occur in

the dogs kidney after ligation of the ureter. (Illustrations 1 and 2.)

TABLE IV  
PATHOLOGIC CHANGES IN PYELONEPHRITIS

pelvis	edema, hyperemia, cellular infiltration, epithelial proliferation, fibrosis
glomeruli	pericapsular fibrosis with eventual obliteration and hyalinization
tubules	areas of atrophy and dilatation, P. M. N.'s, small lymphocytes, protein casts in the lumina
interstitial tissue	fibrosis and inflammatory cells, P. M. N.'s, lymphocytes, plasma cells, macrophages
blood vessels	fibrosis of the media

After Kay, Saul, Medical College of Virginia

The left ureter of the animal was ligated just above the bladder. Two weeks later the right ureter was ligated at approximately the same level. The animal was sacrificed on the day following and at that time each pelvis was aspirated and the contents cultured. The urine from each pelvis was sterile but the pathologic changes of acute and subacute pyelonephritis are abundantly exhibited. This work was first done in rabbits by Helmholz in 1926.<sup>9</sup> Other, but less acute, inflammatory changes may be caused by gradual obstruction to the blood supply to various areas of the kidney. In the rat, on a diet deficient in Vitamin B<sub>6</sub>, oxalate renal calculi may be induced by the feeding of glycine. The renal areas adjacent to the calculi show acute inflammatory changes.<sup>10</sup> Toxins, notably mercury, produce inflammation of the kidney. It is presumed that this is not mediated by bacterial action. Here then are several ways in which the pathologic picture of pyelonephritis may be produced without bacterial invasion, and it, therefore, becomes necessary to reword our definition to read "an inflammatory change, either sterile or of bacterial origin, involving the renal pelvis and parenchyma."

With this definition in mind, it would seem of value to re-examine the discrepancy between the number of cases of pyelonephritis diagnosed at autopsy and those diagnosed clinically. Many cases of pyelonephritis diagnosed at autopsy may well be

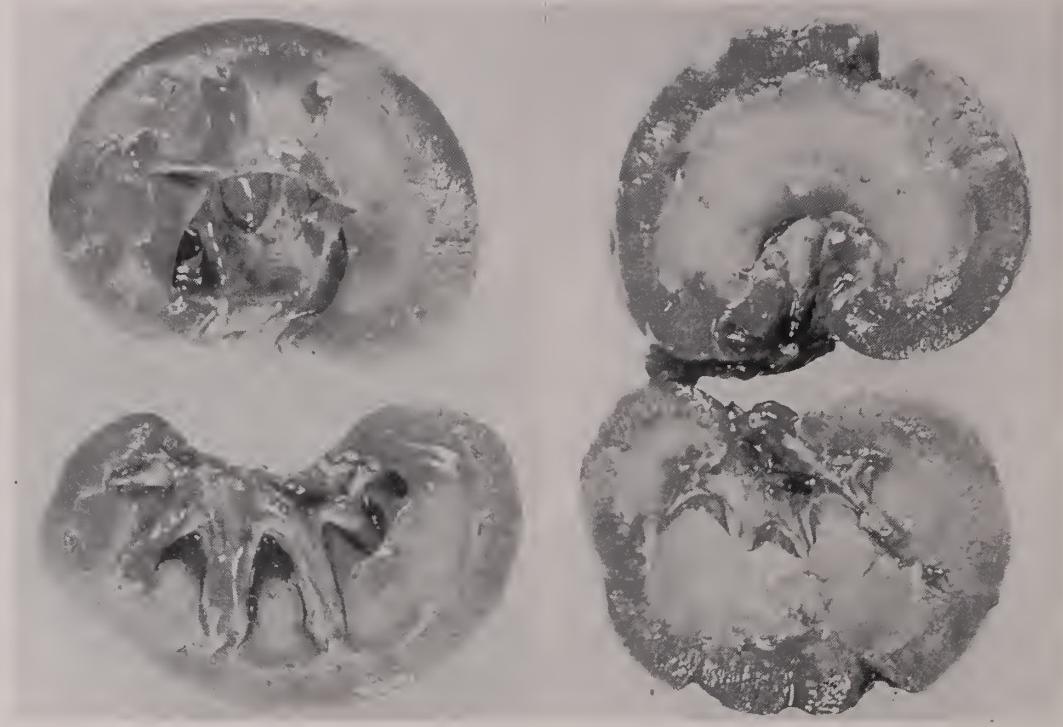


Illustration No. 1: Picture of gross changes in the dog kidney

1. Twenty-four hours after ligation of ureter (right kidney).
2. Two weeks after ligation of ureter (left kidney).

The urine from both kidneys was sterile when the animal was sacrificed.

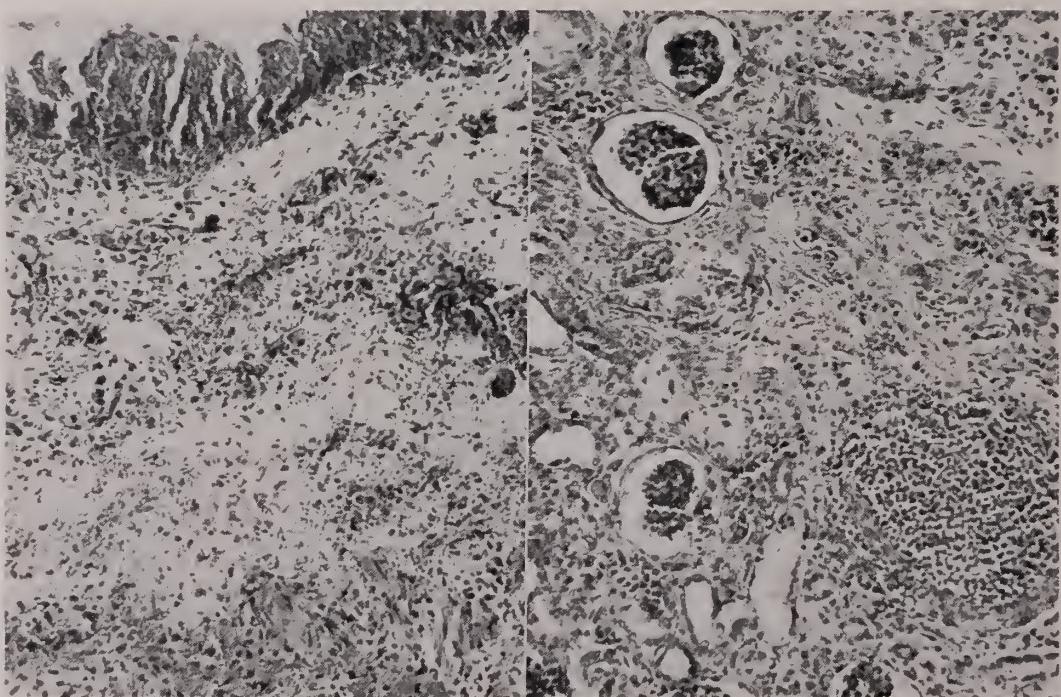


Illustration No. 2: Microscopic changes in the dog kidney.

1. Twenty-four hours after ligation of ureter (right kidney).
2. Two weeks after ligation of ureter (left kidney).

sterile, and bacteriuria can be useful for diagnostic purposes only if the pyelonephritis is of bacterial origin. This would eliminate all cases showing pyelonephritis which are not caused by bacterial invasion. What this number would be can only be determined by culture at autopsy of all kidneys showing pyelonephritis and so far as is known no such series of cases is available.

Again, in those cases which are of bacterial origin there is room for statistical error. The prosecutor is guided by the diagnosis noted on the record. If pyelonephritis

not of bacterial origin, and the discrepancy becomes decreased. To a substantial degree, some may think, others to a less, but no one can state the percentage unequivocally until the necessary series of cases is studied.

If the discrepancy is really not large and can be attributed to a great extent to the anticipated futility of the clinician, perhaps it might have been advisable to educate the clinician rather than postulate the possibility of bacteriuria. Perhaps also, since it might not have been necessary to assume the presence of bacteriuria, it might be advisable to

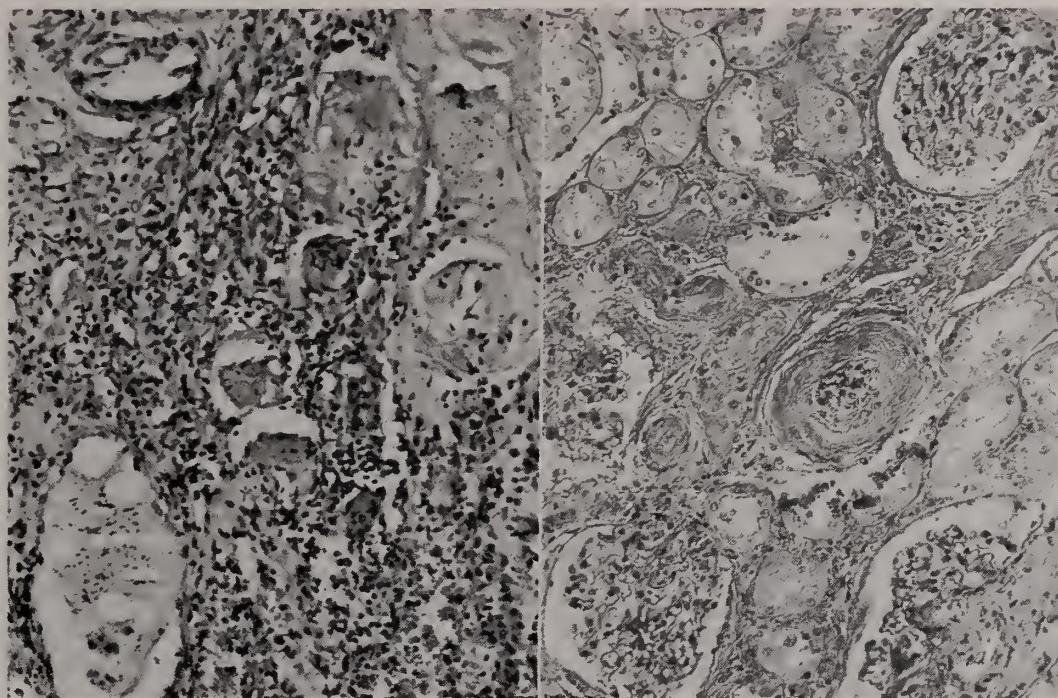


Illustration No. 3:

1. Microscopic changes in kidney of patient dying with calculus disease.
2. Microscopic changes in kidney of patient dying with hypertensive cerebrovascular accident.

is not mentioned, it cannot be recorded. But many cases known by the clinician to have pyelonephritis will come to autopsy without this diagnosis being mentioned because some other condition is the primary cause of death, and pyelonephritis is such a certainty as a complication that it is not recorded. Illustrated are the microscopic changes noted in the kidneys of two patients dying with (1) calculus disease, (2) cerebrovascular accident. (Illustration 3)

Add cases of this type to those which are

reexamine the statistics on the correlation between bacteriuria and pyelonephritis. (Table V)

TABLE V

total autopsies	100
bladders with bacteriuria	40
urinary tracts with active infection	20
urinary tracts with active infection and bacteriuria	17
bladders with bacteriuria without active infection	20
correlation	20
	— = 50%
	40

In addition to this discouraging angle of looking at the statistics, it is noted that three individuals had pathologic evidence of active infection of the urinary tract but the urine aspirated from the bladder failed to show bacteriuria. In a series in which 40 per cent of the autopsies showed bacteriuria, this is a most distressing finding.

Further examination of the correlation between bacteriuria and pyelonephritis as found by renal biopsy reveals the following. (Table VI)

TABLE VI

number of patients with bacteriuria	50
number of biopsies showing normal kidney	10
number of biopsies showing varying stages and degrees of pyelonephritis	28
number of biopsies showing abnormalities without interstitial pyelonephritis	5
number of biopsies showing predominantly vascular changes with variable interstitial inflammation and fibrosis	7
correlation	$\frac{35}{50} = 70\%$
correlation if predominantly vascular changes are omitted	$\frac{28}{50} = 56\%$

In this series, 22 of the 28 biopsies showing varying stages and degrees of pyelonephritis were cultured. All patients had bacteriuria; all biopsies showed pyelonephritis. Eleven cultures were negative; correlation 50 per cent.

In the light of this interpretation of the statistics, it seemed advisable to ascertain the occurrence of bacteriuria in local population groups. Counts were made of the urines collected at midstream voiding of 25 unselected male medical students. There were no counts of  $10^5$  colonies per c.c. The voided urines of 50 consecutive pregnant women on their first prenatal visit were also examined. There was one count of  $10^5$  colonies per c.c. These were diphtheroids.

It seems possible that bacteriuria is a rare finding in Richmond, Virginia.

It has been stated that pyuria occurs in only 60 per cent of the cases of pyelonephritis and, as a consequence, the routine urinalysis unless supplemented by a Gram stain

of the urine is of little value as a means of making the diagnosis clinically. Here again it is necessary to define the term "pyuria". Pyuria may be defined as the occurrence of leukocytes in the urine. Does one leukocyte in a voided specimen represent pyuria? If not one, how many? How many voided specimens are without leukocytes? How long after collection are the specimens examined? With what magnification is the examination made? Does the investigator personally examine the specimen? These questions must be answered before the finding of pus, the usual companion of infection, should be discarded as a criterion for the presence of bacterial invasion of the urinary tract. Much depends on the method of examination.

One method of examination is as follows: If a male, the patient voids in two glasses; within five minutes after voiding, a portion of the second glass is centrifuged and the sediment examined under the low power of a good microscope. If a female, the patient is catheterized and the same procedure carried out. Under these conditions, one leukocyte per low power field constitutes pyuria. Normal urine does not contain leukocytes. This statement is based on the personal observation, using the method noted above, of an average of approximately five urines a day for 15 years. It is believed that, with this method of examination and this definition of pyuria, the finding of pyuria is the most sensitive examination available for the diagnosis of bacterial invasion of the urinary tract. It is also believed that bacteriuria as a criterion for the presence of pyelonephritis is, according to the statistics at present, available in the literature—and this is all of the scientific evidence relating to bacteriuria which is available—of approximately the same value as flipping a coin.

### Discussion

In what type of pyelonephritis would bacteriuria be of value diagnostically? In acute and recurrent acute pyelonephritis, it

is agreed that it is unnecessary because pyuria is a constant finding in these conditions. It must be of value then only in chronic pyelonephritis and only in those cases of chronic pyelonephritis of bacterial origin without pyuria. The cases must be of bacterial origin for the bacteria to be in the urine in the first place, and they must be without pyuria for the study to be more valuable than a routine urinalysis. But this leads directly to the concept of a disease of bacterial origin in which there is no leukocytic response to bacterial attack and this despite the presence of leukocytes in the interstitial tissue of the organ attacked. The proposition is untenable.

### Summary

Statistics are presented for the assumption of the presence of bacteriuria and its value as a marker in finding undiagnosed cases of pyelonephritis. The very same statistics are presented questioning the necessity for the postulation; questioning the occurrence, without pyuria, of the condition; and questioning, if it does occur, its value as a marker.

### Conclusion

From the work on bacteriuria came recognition of the fact that catheterization may be an extremely hazardous procedure. This recognition is essential, but it must be understood that the omission of catheterization, when indicated, is even more hazardous. If the value of the entire concept of bacteriuria is subject to question, then its corollary—the catheter is a lethal weapon—

should also be subjected to the closest scrutiny.

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# Poliomyelitis in an Area of Western Virginia

## A Survey of Morbidity and Mortality and an Evaluation of Immunization Programs

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*Further evidence of the effectiveness of Salk Poliomyelitis vaccine is presented. More needs to be done, however, in getting the greatest number of people protected against this disease.*

THE ROANOKE MEMORIAL HOSPITAL is one of seven hospitals in Virginia designated for the treatment of acute poliomyelitis patients, and it serves twenty-seven southwestern counties with an approximate population of 837,665. In an attempt to evaluate the effectiveness of our hospital's program of therapy, and to compare local immunization efforts with those elsewhere,<sup>1,2,3</sup> the records of the poliomyelitis patients admitted to the hospital from 1950 through 1959 were reviewed, and the following information obtained.

For the ten year period reviewed, there were 1,201 cases of acute poliomyelitis and there were 60 deaths for a mortality rate of 4.99%. Table I lists the number of patients, deaths, and mortality for each of the years. Since Salk vaccine was not widely available until 1956, a decision was made to review closely only the years 1956 to 1959. This provided a series of 201 patients\*

of which 23 required the assistance of mechanical respirators. The poliomyelitis encountered consisted of bulbar (24), paralytic (118), non-paralytic (57), and encephalitic (2). The age range was from two and a half months to 62 years, and both of these age extremes experienced a fatal illness.

TABLE I  
POLIOMYELITIS MORTALITY AT ROANOKE MEMORIAL HOSPITAL FROM 1950 THROUGH 1959

YEAR	Deaths	Number of Patients	Mortality Percentage
1950.....	36	450	8.0%
1951.....	2	54	3.7%
1952.....	2	138	1.5%
1953.....	6	176	3.4%
1954.....	1	104	0.9%
1955.....	1	75	1.3%
1956.....	3	32	9.4%
1957.....	2	30	6.6%
1958.....	3	56	5.3%
1959.....	4	86	4.7%

The patients were evaluated with regard to the effect Salk vaccine may have had on (a) the mortality rates, (b) its effect as judged by the average lengths of hospital stay, and (c) the number of its recipients who had the more severe forms of poliomyelitis (i.e., other than non-paralytic poliomyelitis). There were 12 deaths during the four years and ten had received no Salk vaccine. The remaining two had received only one and two immunizations respectively, each within the month prior to the onset of his illness. Table II lists the patient's immunizations in this four year series but, in summary, 72.6% of those admitted with poliomyelitis had not received their first

\*Virginia Public Health Laboratory confirmed the diagnosis in each case.

immunization, and only 10.4% had received as many as three of them.

TABLE II  
RELATION OF IMMUNIZATIONS TO PERIOD OF HOSPITALIZATION

Number of Salk Shots	Number of Patients	Average Days Hospital Stay
0	146	49.63
1	22	74.27
2	12	31.50
3	21	21.23

Of 146 patients admitted without a single immunization, 114 (78%) developed a severe form of poliomyelitis (acute paralytic, bulbar, or encephalitic) and only 32 (21.9%) developed non-paralytic poliomyelitis. By comparison, among the 21 patients who had received three immunizations, only eight (38.1%) developed a severe form of poliomyelitis, and 13 (61.9%) experienced non-paralytic poliomyelitis (Table III). Twenty-three patients required the

TABLE III  
SEVERITY OF POLIOMYELITIS AS RELATED TO SALK VACCINE

Number of Salk Shots	TYPE OF ILLNESS			
	Paralytic	Bulbar	Encephalitic	Non-Paralytic
0	94	19	1	32
1	13	2	1	6
2	5	1	0	6
3	6	2	0	13

assistance of mechanical respirators, of which 17 had received no immunizations. No patient required a mechanical respirator who had received three immunizations.

One hundred and thirty-six patients had a severe form of poliomyelitis (paralytic, bulbar, or encephalitic) and had less than the recommended three to four immunizations. There were 94 patients who had no immunizations, and developed paralytic poliomyelitis, but this occurred in only two patients receiving three immunizations. Bulbar poliomyelitis developed in 19 patients without immunizations and in only two

who had received three immunizations. Encephalitic poliomyelitis was seen in one non-immunized patient and was not encountered in any of those receiving the recommended immunizations.

The length of hospital stay is also summarized in Table II. This reveals that the average length of hospitalization for a patient receiving three immunizations was two and a half times less than those who had not received any immunizations, and actually three and a half times less than those who had received only one. It is too early to attempt to make an accurate evaluation of these patients with regard to residual deformities, but we can refer to the information reported from an evaluation of 102,184 polio patients.<sup>4</sup> From these records, we would expect our 132 surviving patients who had paralytic, bulbar, or encephalitic poliomyelitis to list 41% with moderate paralysis, 26% with severe crippling, 23% with slight residual disability, and 10% with no residual disability.

## Discussion

When it is considered that a number of patients who had a fatal illness were transferred here from other hospitals, and survived only briefly after arrival, the mortality as well as the morbidity statistics are comparable with those listed elsewhere.<sup>5</sup> Our mortality for patients requiring mechanical respirators, however, was 47.9% which was higher than expected and will be evaluated in a subsequent article.

The statement is made that the immunity of those having three or more doses of the present Salk vaccine is in the range of 90%,<sup>6</sup> meaning that this per cent of vaccinated persons would not contract the disease. Using this figure, we can postulate that 131 of 146 non-immunized patients would not have developed poliomyelitis had they received the vaccine as recommended. This would have reduced the number of hospital days in this group of patients from 7,046 to 705. It may be further postulated that we might have expected a decrease in hospitalization

from the 49.6 days of the unvaccinated to the 21.2 days of those receiving three immunizations. The end result then may well have been a total of 311 days of hospitalization for this group instead of 7,046.

tion program of this area.\* Table IV lists the groups which are as follows: (1) 100 laborers, (2) 170 physicians, (3) 55 professional men, (4) 118 professional men, (5) 31 pharmaceutical company representatives,

TABLE IV  
POLIOMYELITIS IMMUNIZATION SURVEY IN ROANOKE, VIRGINIA (1960)

GROUP	Number	3-4 Immuniza- tions	None	UNDER AGE 51			OVER AGE 51		
				Number	3-4 Immuniza- tions	None	Number	3-4 Immuniza- tions	None
Physicians...	170	135 (79.4%)	26 (1.5%)	120	112 (93.3%)	1 (0.8%)	50	23 (46%)	25 (50%)
Professional Group A...	55	31 (56.3%)	20 (36.3%)	43	31 (72%)	8 (18.6%)	12	0 (0%)	12 (100%)
Professional Group B...	118	49 (41.5%)	48 (40.6%)	80	43 (53.7%)	17 (21.2%)	38	6 (16.4%)	31 (81.6%)
Detail Men...	31	22 (70.9%)	7 (22.5%)	29	22 (75.8%)	5 (17.2%)	2	0 (0%)	2 (100%)
Laborers....	100	38 (38%)	46 (46%)	57	28 (49.1%)	20 (35%)	43	10 (23.2%)	26 (60.4%)
Adult Office Patients...	235	85 (36.1%)	128 (54.4%)	164	82 (50%)	61 (37.2%)	71	3 (4.2%)	67 (94.3%)
(Welfare Clinic) Pediatric...	30	21 (70%)	5 (16.6%)	30	21 (70%)	5 (16.6%)	.....	.....	.....
(Welfare Clinic) Adult....	73	19 (20.5%)	46 (63%)	Unknown	.....	.....	Unknown	.....	.....
(White, Female) Hospital Employees	125	104 (83.2%)	5 (4%)	Unknown	.....	.....	Unknown	.....	.....
(Negro) Hospital Employees (cooks, or- dериlies and janitors)...	63	32 (50.7%)	24 (37.1%)	53	30 (56.6%)	17 (32.1%)	10	2 (20%)	7 (70%)
Total...	1,000	536 (53.6%)	355 (35.5%)	576	369 (64%)	134 (23.2%)	226	44 (15%)	170 (75.1%)

We feel that the information obtained from the records of these patients emphasizes once again the need for vigorous programs of poliomyelitis immunization. As a result, we made a poll of 1,000 of our population of 97,110 (Roanoke) in an effort to evaluate the effectiveness of the immuniza-

(6) 235 consecutive adults seen in an internist's office, (7) 103 outpatients at a welfare clinic, (8) 125 female hospital employees, (9) 63 Negro hospital employees (to whom free immunizations were available and encouraged). Using the total of 1000 inquiries above, it can be seen that 536 had received the recommended number of polio immunizations, 355 had received none, and the remaining 129 had received a portion of them. Of the 576 patients known to be less than 51 years of age, 369 (64%) had received the recommended immunizations,

\*In addition to patients immunized in physicians' offices, Poliomyelitis Eradication Clinics were sponsored jointly by the Roanoke Academy of Medicine and the Times-World Newspaper Corporation in 1957, and the clinics alone had administered 35,000 first injections, 30,000 second injections, and 30,000 third injections in 1957-1958.

and 134 (23.2%) had received none.

A 1959 census bureau survey revealed that 44.1% of the members of 17,500 families had received no poliomyelitis immunizations, and 43.6% had received 3-4. The survey of our area (1960) compares favorably to this and to the 1960 report of the U. S. Public Health Service that 25% of the population had received four injections. This should afford our physicians pride in the previous local immunization efforts, and yet there remains much room for improvement. We must not forget that the majority of patients have little or no medical education, and many will never think to inquire about immunizations after childhood is passed. This leaves the burden to the physician for acquainting his patients with their immunization needs and many physicians do not spontaneously discuss immunizations (pediatricians are a notable exception). Since the effort of patients to obtain immunizations was apparently less than desirable, and the physician's effectiveness in administering them left room for improvement, an effort was made to list the majority of reasons for the failure. These are not tabulated in per cent since individual phrasing was combined to give the following answers:

#### *Patient's Reasons for Failure to Have Immunization*

1. Failure to realize the need or impor-

tance (and this particularly applied to tetanus vaccination and booster injections).

2. Fear of injections, and/or reactions to vaccine.
3. Waiting for an improved vaccine, and/or failure to allot time, and/or procrastination.
4. Desire to avoid expense.

#### *Physician's Reasons for Ineffective Immunization Programs in Their Offices*

1. Belief by specialists that others take care of this for the patient.
2. Dislike of sensation of "selling" an item, and fear of giving patients this impression. (This group administered them readily if the patient inquired.)
3. Insufficient time and more important matters to discuss with the patient.
4. Had not given the matter much thought, or tended to forget it.
5. Individualizes recommendations, and has hesitancy to recommend them strongly unless the need is apparent because of additional expense involved for the patient. (These physicians administer tetanus vaccine to farmers and laborers, and poliomyelitis vaccine to younger patients.)

To lend further emphasis to the problem of inadequate immunization programs, Table V summarizes the series with respect

TABLE V  
TETANUS IMMUNIZATION SURVEY IN ROANOKE, VIRGINIA (1960)

GROUP	Number	Originally Immunized	Active Immunity (Booster in Last 5-8 Years)
Physicians.....	170	113	75
Professional—Group A.....	55	36	20
Professional—Group B.....	118	60	41
Detail Men.....	31	27	16
Laborers.....	100	0	0
Adult Office Patients.....	235	68	31
Welfare Patients.....	103	0	0
Female Hospital Patients.....	125	0	0
Negro Hospital Patients.....	63	25	7
Total.....	1,000	349	190

to their tetanus vaccinations, and it can be seen that only 190 of 1000 had active immunity when polled. The majority of physicians will agree that everyone should be immunized against tetanus, and it is well recognized that immunization with the toxoid is more effective than antitoxin administration at the time of injury.<sup>7</sup> The five to fifteen per cent incident of toxic reactions to the latter is one of the best reasons for the use of tetanus toxoid since an injured person who has had basic immunizations and regular booster injections will not require the use of tetanus antitoxin. Of particular interest is the fact that 61 of 100 laborers recalled injuries for which they received the skin test and antitoxin, but none of them received the vaccine which should be instituted at the same time to acquire immunity for future injuries.

We believe that the medical societies should remind their members to encourage the necessary immunizations in cooperation with local and state health departments. We favor a poster for each physician's office (emanating from the American Medical Association, State, or County Medical Society) which would list the basic desired immunizations. We feel that these should also be posted in several public places, such as post offices, court houses, hospital lobbies, etc., as a means of medical education since the percentage of the population entering physicians' offices is not large. It is not felt that this would be unethical, and it would be a helpful supplement to the short "advertisements" for polio vaccine heard over most radio stations. It is also felt that this information should be placed on small cards (authorized by the above societies) and given by the receptionists to each new patient entering the physician's office. In such a manner, we physicians can fulfill our obligation to provide the population with accurate information regarding immunizations and replace that which they receive from lay magazines and their friends. We would like to have consideration given to wallet-sized personal immunization records (to be

authorized by the American Medical Association) similar to those used in the Armed Forces (DD form 737). We are in agreement with laws (such as Roanoke's) which make polio immunizations compulsory for children. The previous recommendations are made with a full awareness of the relatively low mortality of these diseases in the United States (Table VI) and with a knowledge of

TABLE VI  
MORTALITY OF POLIOMYELITIS AND TETANUS IN  
UNITED STATES (1956-)

YEAR	Poliomyelitis	Tetanus*
1956.....	566	246
1957.....	221	297
1958.....	255	303
1959.....	540	283

\*When tetanus results from a minor wound, the death is assigned to tetanus. When tetanus complicates a fatal major injury, the death is not listed as due to tetanus.

the southern United States study which reported an estimated 830 primary infections of poliomyelitis virus in the population for each paralytic case. We are also aware of estimates that 93 million Americans have had their first injection of polio vaccine, which would comprise 60% of the population under sixty years of age.

### Summary

The records of 201 poliomyelitis patients admitted to the Roanoke Memorial Hospital (1956-1959) were reviewed and the results further emphasize the effectiveness of Salk vaccine in those receiving it, and the need for continuation of effective immunization programs. The latter was re-emphasized by a poll of several groups regarding their poliomyelitis and tetanus immunizations. Suggestions for improved programs are made with the hope they will receive consideration.

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## A Guide to Anticoagulant Therapy

A new booklet to provide physicians with guiding principles and practical recommendations for the use of anticoagulant drugs has been issued by the American Heart Association.

Entitled "A Guide to Anticoagulant Therapy," the booklet contains material designed to aid the physician who has decided to institute anticoagulant therapy in making the most effective use of these drugs. It does not consider the indications for therapy or the merits of different agents in the prophylaxis or treatment of specific diseases.

The two types of agents currently employed—heparin and coumarin-type compounds—are discussed with reference to their physiologic effects, administration, contraindications, and appropriate antidotes. Fibrinolytic agents (either used alone or in combination with anticoagulants) are not included "because there has not been enough clinical experience to permit recommendations."

The publication emphasizes the importance of individualized treatment, careful clinical observation, and frequent reliable laboratory tests. In addition, many common problems of anticoagulant therapy are discussed in question and answer form. The booklet also contains several tables and selected references.

The guide originally appeared as an article in the July, 1961, issue of "Circulation", one of the three professional journals issued by the Association. It was prepared for the organization's Committee on Professional Education by Benjamin Alexander, M.D., and Stanford Wessler, M.D., of Beth Israel Hospital, Boston.

Copies of the booklet may be obtained by physicians from their local Heart Associations or the Virginia Heart Association, 812-814 West Franklin Street, Richmond 20, Virginia.

# A Classification of Coronary Artery Disease

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*It should be understood by the laity that discomfort in the chest is often a symptom of coronary artery disease.*

**A**N ATTEMPT to write further on any aspect of coronary artery disease may be likened to the re-threshing of old straw; and, in this article, it is no part of my intention to try to add anything new to what has been said or written previously. Rather, it is my intention to present evidence in support of the belief that a better dissemination of the existing information concerning coronary artery disease is needed.

Paradoxical as it may seem, it appears that even as more and more light is shed on the truth concerning coronary artery disease, more and more people seem to be dying from this malady. A renewed effort to let the public know of the danger of chest pain would seem to be indicated. Cerebral palsy, polio and cancer campaigns to arouse the public, for example, come to mind. The problem of a public being unaware of the danger of chest pain, even though the information is available, may be likened to the problem of distribution when food is being wasted in one part of the world while people are starving to death in another part of the world.

Recently I had three patients with chest pain, and the responses of these three patients to their chest pain are typical, I believe.

Patient number one did not know the danger of chest pain and did not seek help. Patient number two sought help but would

not heed advice given. Patient number three sought help, heeded advice given, but difficulty was encountered by the physicians in localizing the cause of the chest pain. Two of the three patients died; the third one luckily survived.

In my work as Medical Examiner, I note that I am being called more and more often to the scene of the sudden passing of people in the third decade of life. In nearly every case, history obtained from the family of the deceased, revealed the fact that the deceased had complained of chest pain and distress, at intervals for a period of from several months to one or even two years. Yet in most instances no physician had been consulted. The first of two most recent cases I recall was a young farmer, 39 years of age, who died very suddenly at his home and whose history revealed chest pain for a period of six months. The second was a laborer, age 34 years, who died suddenly and whose history revealed indigestion and chest pain for one year. In the light of the foregoing, I feel it may be worthwhile, not only to resow the seed, but even to re-plow the field in an attempt to refocus the attention of the patient on the danger of chest pain, and to remind the physician of his responsibility to the patient with chest pain. Someone has said, "*momentous issues hinge on the proper use of the present moment.*" While the foregoing was said in emphasizing growth toward spiritual maturity and the attaining of eternal life, it is equally true in the prolongation of physical life. There is no doubt that in coronary artery disease, life itself may well hinge on "the proper use of the present moment."

The real tragedy lies in group number one. That is, those people who do not know the danger and significance of chest pain

and actually do not seek help. While it is not my wish to make people overly heart conscious, nevertheless, I feel it is the physician's responsibility to let the public know that chest pain may be a warning of a serious situation being present. Patients with abdominal pain will seek help as a rule much more quickly than patients with chest pain.

I wish to review briefly the three cases referred to above as typical.

*Case number one:* White, male, age 55 years. This patient usually sought medical attention for simple colds, backache, etc. He came to my office on many occasions to have his urine examined because he had the backache, fearful he may have kidney trouble. Yet he picked strawberries in his patch from Monday through Friday with pain in his chest without seeking help because he did not know the significance of chest pain. He thought the pain was due to his stooping and to rheumatism. He was buried the following Monday.

*Case number two:* White, male, age 40 years. This patient was not known to the writer and was being seen by him for the first time. This patient sought help for what he self-diagnosed as "indigestion". When history and examination revealed the substernal character of the patient's distress, the patient was told that indigestion was a symptom and not a disease and since the distress was under the breastbone, a heart condition would be the most likely cause of his so-called indigestion. The patient belittled the idea that there was anything wrong with his heart, saying, it was "only indigestion" and adding that he was in town "playing Santa Claus" for his children as it was Christmas Eve. The patient refused to submit to recommended treatment but did agree to have an electrocardiogram done the following day. The electrocardiogram done on Christmas Day showed changes compatible with the diagnosis of coronary artery disease. The patient died very suddenly the next day.

*Case number three:* White, female, age

64 years. While this patient was traveling in the west to visit with her daughter who is married to a physician, she complained of upper sub-sternal heaviness, choking and distress. She was seen by her daughter's physician, who took her to a hospital where electrocardiograms and other studies were made. All findings were essentially negative and the patient continued her visit, returning to Woodstock two weeks later with the upper sub-sternal heaviness and choking persisting. She was hospitalized and examined thoroughly to determine the nature of the trouble. Chest x-ray was normal. Spine x-ray was normal. Gall bladder series was normal. Upper G. I. series revealed a hiatal hernia. Serial electrocardiograms were normal, being of the same pattern as those done five years previously. Six days after admission, the patient experienced a worsening of distress in the upper sub-sternal region, which was associated with profound shock, profuse sweating, constrictive and oppressive phenomena, manifesting all the symptoms and signs of a severe coronary insufficiency or an acute occlusion. Electrocardiogram was done at the time of the seizure with subsequent tracings, confirming the diagnosis of severe coronary insufficiency without occlusion. This patient was subsequently referred to the cardiology department of the University of Virginia Hospital in Charlottesville, Virginia, where the diagnosis of coronary artery disease with insufficiency was confirmed.

It seems to me that all patients with coronary artery disease may well fit into one of the three foregoing types of cases, and I feel that we physicians and other members of the "Health Team", are charged with a responsibility to do all we can to let the public know of the danger of chest pain and the importance of early medical care. Further, we must do our best to advise them and guide them in a manner that will assure them the safest course to pursue through their affliction. It is, of course, well known, in dealing with the patient with chest pain,

that the history is so very, very important and helpful, actually much more so than the electrocardiogram frequently turns out to be. *The expression, "chest pain" has been used throughout these comments: actually, however, the expression, "chest distress" would probably describe more nearly what I have in mind and the point I wish to emphasize.* Before the pain stage is reached, many of these patients will experience chest tightness or fullness, or a pulling sensation in the neck, or a sensation of weight upon the chest; and it is at this stage of development that the physician may be able to be very helpful, even life saving. So often in cases at this stage, the electrocardiogram is entirely normal. As I write this, a case comes to mind of a patient, who, upon arising one morning, experienced a pulling in his neck, with no other symptoms whatsoever. He consulted his physician. An electrocardiogram was done and was entirely normal. That same evening, the patient died suddenly. It would appear that the safest procedure would be to treat such patients as heart cases until proven otherwise.

A review of the past usually gives enlightenment and help for the present and enables us to peer into the future with more cer-

tainty and confidence. After President Eisenhower's heart attack, I recall Dr. Paul White being quoted in the newspapers to the effect that while there are those things probably having to do with coronary artery disease which we have to accept, such as heredity, body build, etc., "it is time for the public, in the areas where it is possible to do so, to start doing those things which would help to stay the onset of coronary artery disease, such as eating properly, exercising more and leading the type of life that will result in the attainment of peace of mind." I remember as I read Dr. White's comments, I wondered if he may have been thinking about the verse in Proverbs that states, "a merry heart doth good like a medicine". It is for these reasons that I feel it may not be amiss to re-plow the field of available information and re-double our efforts to inform the public as well as the patient of the significance and danger of chest discomfort. I feel, too, the need for continued study to improve our professional competence and for patience and sympathetic understanding in the treatment of the patient.

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118 North Muhlenberg Street  
Woodstock, Virginia

### World's Finest Medical Care

The ability and willingness of the drug industry to invest vast sums in research, in new methods of production, and in factories, as well as their proficiency in mass production and rapid distribution, have contributed greatly to medical knowledge and the service that we, the members of the medical profession, are able to give to the public. Their cooperation, along with the afore-mentioned facts, has produced, probably, the finest system of medical practice and care in the world.—Irving Rubin, M.D. in *Annals of the District of Columbia*, Oct. 1961.

# The Ideal Surgeon

PAUL C. COLONNA, M.D.  
Philadelphia, Pennsylvania

THE FEW WORDS I have to say this afternoon refer to my surgical training under Dr. J. Shelton Horsley. I vividly recall one miserably rainy night in the summer of 1920, coming by train from Baltimore, shortly after my graduation at Hopkins for an interview with him for an internship at St. Elizabeth's. Suffice it to say I received the appointment and then began an association that has meant much to me over the years. A close association with the then small staff gave me the first opportunity to receive a broad surgical training from a Master in the technical art of surgery but more than that, to learn how an understanding of physiological processes are essential in the education of a physician in order to properly study the pathological processes. He taught me that it is necessary and basic for a physician to have a clear concept of the physiological.

We were a small close-knit family then, taught by a skillful surgeon, who imbued us with the highest ideals for service to the sick. He taught us to appreciate the value of surgical research, and the young intern had the opportunity of doing surgery at his dog laboratory near the Medical College of Virginia. This, as I look back over those early formative years, offered an intern the most valuable training possible in the study of normal tissue reaction as well as sharpening his surgical technique in blood vessel surgery, tendon, and gastrointestinal problems. We were closely in contact with the daily care and troubles of the sick at St. Elizabeth's, and woe betide the poor intern if he failed to pull himself out of bed during the wee small hours, sometimes three or four times nightly, to insert a stomach pump

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Read at the 31st Annual Meeting of the Association of Ex-Interns and Residents of the St. Elizabeth's Hospital, Richmond, Virginia, April 25, 1961.

when needed or leave adequate sedation for the restless patient.

I would like today to take this occasion to pay my personal homage to a great teacher and a sincere personal friend who conceived this Clinic and guided its destinies for many years. It is like bringing "Coals to Newcastle" to eulogize Dr. J. Shelton Horsley to this audience, but I feel such a deep personal debt to him that I welcome the opportunity today. I can think of no more fitting place than here, to recall a few of the qualities that he indelibly impressed on all who were fortunate enough to come under his training and influence. Today we are witnessing the dedication of the expanding facilities of a great Clinic which was built on a sound foundation of good medicine, led by a leader who was foremost in modern research. He realized also the value of efficient and constant team-work in the fight against sickness, and I am certain it would be a tremendous satisfaction for him to realize its growth and expansion as shown here today. Certainly it is a far cry from the skeletal staff of 1920 to the present staff, but the intangible qualities that he tried to teach his interns and associates certainly have left many devoted followers. His own professional life was based on honesty to his patients, sincerity of purpose and familiarity with the research problems of the day, as well as a recognition of the physical and psychological needs of his patients—those qualities which must always be the credo of the physician. As all of us grow older, there is a tendency to indulge in retrospection, and to thank our stars that certain personalities entered into and had a profound moulding influence on our professional training.

Those of you who have a copy of a little

book he dedicated to the ex-interns of St. Elizabeth's Hospital, called "Research and Medical Progress," published in 1920 by Mosby, must, as I do, value it highly, for it represents his philosophy of thought on many medical subjects to which he devoted his whole life. His philosophy and pattern of thought on many subjects are strikingly presented in this little volume.

I have tried to remember the most lasting quality that a close association with Dr. Horsley impressed on my professional life. All of us as physicians must have had several personalities to whom we are greatly indebted and to whom we look back with gratitude. Certainly the growth of a human life through the passage of time is made up of a complex and diversified series of successes and failures. There are common denominators, however, in the growth of every physician, such as objective honesty toward the patients who are entrusted to his care, a sincerity of purpose in his efforts to heal the sick, plus plain hard work, over and above the day's duties and obligations, and

these and other qualities were exemplified in Dr. Horsley, but there was one other quality that he possessed and made a lasting impression upon me. This was the constant scientific curiosity that animated him in the treatment of his patients. He unconsciously imbued those of us who daily worked with him with a restless search for secrets of curing disease. That quality was shown in the zest with which he approached his daily work, particularly when faced with challenges and difficult surgical problems. This was one most rewarding quality that he left on this then young and impressionable surgeon, and for which I owe him my greatest thanks. I am sure these fires will be kept burning in the hands and minds of his successors at this Clinic who are fortunate to have the background of his teachings and of his genius. I will forever feel grateful for the opportunity of knowing and training under this "Ideal Surgeon."

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133 South 36 Street  
Philadelphia, Pennsylvania

### Which Technologists Have the Title?

Confusion in the minds of hospital administrators and physicians about the qualifications for certification of medical technologists is leading to the hiring of unqualified laboratory personnel.

MT(ASCP) is the registration insignia of medical technologists who have had three years of college plus a fourth year of clinical training in a hospital school of medical technology headed by a pathologist and approved by the American Medical Association.

Board examinations for this degree are given semiannually by the Registry of Med-

ical Technologists of the American Society of Clinical Pathologists in Muncie, Ind.

M.T. are the initials used after names by a broad cross section of medical laboratory personnel, many of whom had their initial training in commercial or private schools of medical technology; others learned on the job, and still others were trained in the armed forces.

The M.T. is awarded by a self-authorized registry, American Medical Technologists, functioning out of Enid, Okla., on the basis of examinations often proctored in AMT members' homes.

# Esophageal Polyp

## Case Report

JOHN B. GORMAN, M.D.  
RICHARD N. de NIORD, M.D.  
Lynchburg, Virginia

*This potentially fatal condition can be cured if the diagnosis is suspected and appropriate surgery performed.*

A 63-YEAR-OLD WHITE MALE was first seen in the office on February 10, 1960, with the chief complaint of, "I've got a lump in my throat."

Routine ear, nose and throat examination was negative except for the striking finding of what is described in the office records as a "fleshy snake-like mass of tissue extending from the base of the hypopharynx into the larynx and reaching down to just above the vocal cords". There was a well-healed linear scar over the sternocleidomastoid on the left.

Past medical history included the following: On January 31, 1952, a left thoracotomy was carried out at a Veterans Administration hospital and the esophagus was entered at the lower third via the eighth rib. The pedicle could be seen to extend upward and the fourth rib was then removed. The pedicle was again seen to extend upward through the thoracic inlet into the neck. The pedicle was divided and sutured.

The second operation at the Veterans Administration Hospital was carried out on April 23, 1952, at which time incision was made in the left neck and the polyp again located. An esophagoscopy immediately

following the operation was said to have been normal.

It is to be noted in this case that the patient was said to have been seriously ill at the time of the original admission in January 1952, due to blood loss and inanition.

At the time of this admission to the hospital, repeat ear, nose and throat examination revealed completely normal hypopharynx with the exception of more than the usual amount of salivary secretions pooling in the hypopharynx.

Barium swallow showed a constant defect in the cervical esophagus.

Esophagoscopy again confirmed the presence of the snake-like lesion previously described, the surface of which appeared entirely normal. (Figure 1.)



Fig. 1. View of Esophageal Polyp through esophagoscope.

On February 23, 1960 exploration of the cervical esophagus was carried out through a left neck incision and the lesion delivered (as seen in figure 2).



Fig. 2. Delivery of polyp through lateral neck incision.

### Comment

Symptoms in this type of case have characteristically, in other reported cases, been such that they might be divided into two categories:

#### Gastro-intestinal Respiratory

Of the gastro-intestinal symptoms, dysphagia was the most frequent. Regurgitation, vomiting, recurrent or prolonged hiccup and weight loss also occurred. Anemia has been described in several cases and has been the cause of death in at least two. A dramatic occurrence, obviously quite helpful in diagnosis, is regurgitation of the tumor. In 103 cases reviewed by Totten, et al., approximately one-third of the patients with polypoid tumor died as direct or indirect result of the tumor and most of these were incorrectly diagnosed. In only three of the thirty cases was the diagnosis of polyp correctly made. One of these is of interest in that the patient died as a result of the poly-

poid tumor two years after the supposed removal of some of the growth by ligation.

### Summary

The patient here presented was fortunate to have the "lump in the throat" present itself quite dramatically on mirror examination when first seen.

One-third of the cases reported in the literature died as a result of esophageal polyp.

Esophageal polyp is a curable lesion.

A strong index of suspicion, x-ray and esophagoscopy are required to make a definitive diagnosis of esophageal polyp.

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Suite 15, Medical Center  
Lynchburg, Virginia

## Correspondence . . .

### "Get the Picture?"

To The Editor:

Most of the alumni of the University of Virginia will undoubtedly be ashamed to learn that the dean of their school of medicine has met in the White House with certain other physicians to pledge allegiance to President Kennedy's socialism. These forty or more physicians, however, are not practitioners of medicine, but merely administrators, and are concerned primarily with sources of money. These men are learned, usually of professorial rank, have not infrequently inherited or married wealth, and have throughout their professional lives been on the payroll of some university, or endowment of a wealthy person, or some branch of government. They have lived an "institutional life" and have not competed in the open market of private practice and know little or nothing of the practice of medicine. Therefore, they do not speak for the medical profession and do not in any manner represent our profession.

Their presence is necessary, and one of their prime functions is the acquisition of money to operate medical schools. But they seem to feel that the end justifies the means, and that a totalitarian state is desirable if money is provided for their schools. Their thinking seems to stop at that point.

The King-Anderson bill, many other bills introduced before Congress, and most of the New Deal—Fair Deal—New Frontier proposals are completely socialistic. So far the people of Virginia have not desired socialism and it is most improper that an employee of the State should use his position of authority and prominence to work for socialism and pledge his efforts to this end.

Very truly yours,

M. MORRIS PINCKNEY, M.D.

To The Editor:

Many of our Virginia physicians have called me recently and indicated that they are greatly disturbed by occurrences at both of our medical schools.

What manner of men are now teaching our future doctors? I believe it is now time that the responsible faculty committees reconsider some of their recent teacher appointments.

Yes, a man can surely express his convictions on the current trend toward the socialization of medicine and socialism per se, but let us be certain he is not teaching these principles to the young men and women studying in our medical schools.

Many physicians were quite astonished to learn that one of these faculty members was a member of the group which recently called on the President and established the Physicians' Committee for the Health Care of the Aged Through Social Security. Of the twenty-seven physicians in the group, very few are actively engaged in the private practice of medicine. Instead, most of them were teachers, administrators, Union officials, etc.

The fact that Virginia was represented among this group is not only embarrassing and distasteful to the vast majority of physicians in the State, but is also embarrassing to our Congressmen who have long championed the efforts of the physician to maintain the traditional American way of life and the freedom to practice medicine according to the best dictates of his judgment.

Sincerely,

W. L. BALL, M.D.

To The Editor:

We were amazed and shocked to see the name of the Dean of the Medical School of the University of Virginia listed among the

twenty-seven doctors who visited President Kennedy in support of the King-Anderson Bill.

We would support disciplinary action unless there is a good explanation for this.

Sincerely,

WILLIAM R. HILL, M.D., '34  
A. L. HERRING, JR., M.D., '41

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To The Editor:

I have read with concern the newspaper accounts of the "rose garden" meeting of a group of physicians with President Kennedy, pledging their support of the government's approach to medical care of the aged. These physicians were not only named, but were identified by institutions or agencies. Among them was the Dean of the Department of Medicine of the University of Virginia. I would not quarrel with an individual doctor's decision to support these beliefs which his conscience dictates. I do resent the implication and misleading use of the association of these beliefs with organizations, institutions or agencies contrary to the best interests of medicine as a whole. Dean Hunter's views on health care for the aged do not reflect the thinking of the vast majority of the practicing physicians of Virginia, The Medical Society of Virginia or the Medical Alumni of the University of Virginia. Nor do I believe that his stand is in accord with that of the Medical Department of the University of Virginia as best I have been able to ascertain.

It is not my desire to criticize Dean Hunter personally. I hold him in high regard and believe that his contributions to the Medical School at Virginia have been considerable. Having spent several years in the administrative field of medicine, I can even understand some of the reasoning and motivations which have determined his belief. However, I cannot help but feel that a disservice has been done to medicine in Virginia by the unfortunate omission of a statement or clarification of the fact that Dr. Hunter

represented an individual physician's convictions and that he was not an authorized spokesman for the Medical Department of the University of Virginia or any other group of physicians.

Very truly yours,

WILLIAM GROSSMANN, M.D.  
University of Virginia 1933

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Dr. Harry Warthen  
Richmond, Virginia

Dear Dr. Warthen:

I hope that it will be possible to publish this letter in the Virginia Medical Monthly, in order that my friends (and former friends!) in the State may have clarified for them certain points relating to my espousing the position taken by the group of physicians who recently met with President Kennedy.

First, as I indicated in a letter published in the Washington Post on April 3rd, I was speaking *entirely as an individual*. I am sure any alumnus of the University knows that *no one* can speak for the institution or for one of its faculties on a matter such as this.

Secondly, I made it clear, and reiterate here, that my position does not represent any official teaching in our Medical School. The latter has been conducted through a series of lively debates in which various and all points of view have had free and open expression.

Next, I shall try to make my own position as an individual as clear as possible. The document to which I lent my name (actually, I did not attend the meeting with the President, though I wish I could have) stated simply that we believed in the balance that the social security method of financing health care for the aged was the soundest approach. I have never espoused the King-Anderson bill itself as ideal, but I do believe the following and feel that it is proper for me to say so publicly as an individual:

1. I believe there to be a real need, especially for coverage of catastrophic illness in old age, which has not been covered, and cannot be covered in the face of rising costs of care, by private insurance without serious risk to the whole solvency of the latter.

2. I believe it is fiscally more conservative to finance such a large and costly undertaking as this from an *identifiable tax source* rather than from general tax funds as provided in the Kerr-Mills bill, which, in company with our Representative Burr Harrison, I think is fiscally much more hazardous.

Finally, I feel that the public has gained the general impression that medical opinion

is monolithically in support of the position officially taken by the A.M.A. This I do not believe to be the case. I am just as interested as any one in preserving our system of free enterprise including the maximum of freedom of action for patient and physicians, and I am also very much interested in preserving freedom of speech for physicians who do not agree with the A.M.A. position.

Sincerely yours,

T. H. HUNTER, M.D., Dean

April 13, 1962

### **Obesity Related to Eight Conditions**

There is a "vast accumulation of evidence that excess weight is not good for humans," according to Dr. William Bolton, associate editor of the American Medical Association's Today's Health magazine.

Medical surveys have shown that eight conditions are significantly related to obesity. They are coronary artery disease, diabetes, high blood pressure, disorders of the

liver and gall bladder, greater risk in any operative procedure, unexpected formation of blood clots, deterioration of blood vessels in other parts of the body besides the heart, and arthritis.

"Since some of these conditions contribute to certain of the leading causes of death in this country, their association with obesity would appear to be important."

MACK I. SHANHOLTZ, M.D.  
*State Health Commissioner of Virginia*

## **Mass Casualty Treatment Principles**

The following article which deals with mass casualty treatment principles applicable to pediatrics, anesthesiology and the use of morphine appeared first in the *Pennsylvania Medical Journal*. Since these topics have been discussed many times at Medical Society of Virginia meetings, it is felt that the appearance of this article in our journal would answer many questions.

### **Pediatrics**

It is imperative that, if the health of infants and children is to be maintained at the highest possible level under the conditions that may be expected to prevail following disasters of serious proportions:

1. Breast feeding of infants be encouraged under disaster conditions.
2. Infants and children be under the care and supervision of their own parents, whenever possible.
3. The normal infant up to six months of age be provided with one quart of fluids per day. Carbonated water, fruit juices, and soft drinks may be substituted for water, if necessary, in the preparation of the child's formula. A normal child over three months of age safely can take unwarmed cow's milk.
4. Normal children up to one year of age be provided with approximately  $2\frac{1}{2}$  ounces (75 milliliters) of water or other suitable fluids per pound of body weight per day and from 55 to 60 calories per pound of body weight per day.
5. Normal children from one to two years of age be provided with approximately 2 ounces (60 milliliters) of water or other suitable fluids per pound of body weight per day and 45 calories per pound of body weight per day.
6. A normal child two years of age or over be fed as an adult.
7. Vitamin and mineral supplements be considered of no significant importance to a normal child for a period of 30 days. Following a 30-day period of deprivation of such supplements, they should be added to the diet of the child.
8. Food, feeding and water sanitation pertinent to infants and children be considered of vital importance. Bottles and nipples must be boiled prior to use.
9. Under disaster conditions, the feeding formula be used as soon as it is prepared and not be stored before or after feedings.
10. A two-month supply of uncontaminated water, dried or evaporated milk, sugar in the form of Karo or Dextri-Maltose, and cereal products be stored for emergency use for each child under the age of two years in the home.
11. Foods with which the infant or young child is familiar be stored for emergency use, since they will be better accepted than will those with which he is unfamiliar.
12. Pre-stocked emergency supplies of food and water, whether or not for infants and children, be stored to prevent bacteriologic, chemical, and radiologic contamination.
13. An adequate supply of diapers, pins, nursing bottles, nipples, and other necessary items be pre-stocked for emergency use.

- gency use in homes in which there is an infant or young child.
14. Immunization at the proper ages of infants and children against tetanus, smallpox, typhoid and paratyphoid fevers, poliomyelitis, pertussis, and diphtheria be encouraged as an individual survival measure.
  15. For the treatment of diarrhea in infants and young children, food be withheld and oral electrolytes, if available, or boiled water be substituted.
  16. Narcotics not be administered to infants and children under two years of age, except by, or as directed by, a physician.
  17. Injuries to infants and children be treated as are similar injuries sustained by adults.

### Anesthesiology

Under the conditions that may be expected to prevail following disasters of serious proportions, if maximum possible use is to be made of available personnel and anesthetic agents in providing optimal care to mass casualties, it is imperative that:

1. During the immediate post-attack or post-disaster phases and until adequate assistance becomes available, anesthesiologists and anesthetists in the disaster and support areas supervise the administration of anesthetics by teams of less highly trained personnel.
2. The smallest effective amounts of anesthetic agents be employed in the care of mass casualties.
3. Atropine sulfate be administered in doses of 1/150 grain (0.4 milligram) intramuscularly prior to anesthesia, both local and general.
4. Pentobarbital be administered in doses of from 50 to 100 milligrams intramuscularly prior to the induction of anesthesia to allay apprehension.

5. A local anesthetic be employed where a satisfactory state of analgesia will suffice for the performance of treatment procedures.
6. A local anesthetic be considered the agent of choice for casualties with wounds of the extremities.
7. The employment intravenously of thiopental in concentrations not exceeding 1 per cent be considered for general anesthesia.
8. The employment of nitrous oxide in 60 per cent or lesser concentrations be considered as the anesthetic agent for major surgical procedures in severely wounded individuals.
9. Ether be considered the anesthetic agent of choice for most casualties requiring a general anesthetic to be administered by unskilled personnel.

### Morphine and Other Potent Narcotics

Because the proper use of morphine and other potent narcotics is of such great importance under mass casualty conditions, it is considered imperative that, following disasters of major proportions:

1. Morphine and other narcotics not be issued to lay rescue workers, litter bearers, ambulance drivers, and other similar non-professionally trained personnel for use on casualties.
2. Morphine and potent opium derivatives be administered only in medical treatment facilities by qualified personnel.
3. In the treatment of injured personnel, morphine be used only for the purpose of relieving severe pain. Since major wounds frequently are relatively painless, there is no indication for morphine to be administered solely because of the presence of such wounds.
4. Morphine or other potent narcotics not be administered to the emotionally disturbed, except for the relief of severe

- pain due to traumatic injuries, or to casualties with marked hypotension.
5. Morphine or other respiratory depressants not be administered to casualties suffering head injuries, severe chest injuries, respiratory depression, embarrassment, or distress.
  6. In the care of the injured and wounded,  $\frac{1}{6}$  grain (10 milligrams) of morphine sulfate, or a therapeutically equivalent dose of another potent opium derivative, be the maximum dose for an adult, with proportionately smaller doses for infants, children, and the aged.
  7. The dosage of morphine or other potent narcotic and the hour, date, and route of administration be entered on the medical records of those casualties who receive it.

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64: 1359, October, 1961.

(c) 1961 by the Pennsylvania Medical Society,  
Harrisburg, Pennsylvania.

MONTHLY REPORT OF BUREAU OF COMMUNICABLE  
DISEASE CONTROL

	Mar. 1962	Mar. 1961	Jan.- Mar. 1962	Jan.- Mar. 1961
Brucellosis	0	0	1	5
Diphtheria	2	0	4	4
Hepatitis (Infectious)	166	115	499	294
Measles	2149	1506	4815	3896
Meningococcal Infections	7	4	22	17
Aseptic Meningitis	1	1	5	3
Poliomyelitis	0	0	1	0
Rabies (In Animals)	19	44	44	81
Rocky Mt. Spotted Fever	1	0	2	2
Streptococcal Infections	1341	853	2957	2143
Tularemia	2	0	4	3
Typho'd Fever	2	0	4	0

# Mental Health . . .

HIRAM W. DAVIS, M.D.

## **Statistical Survey of Aged in Mental Hospitals**

The statement is frequently made that there is a large number of patients in the State mental hospitals who do not need to be there. The implication is that many patients, particularly in the senile category, could be just as well cared for in some sort of nursing home. In order to look specifically into this matter, our statistician devised a questionnaire to be filled out by the physicians in the hospitals after an individual study of each case. The questionnaire was designed primarily to evaluate the mental condition of the patient on admission, the current mental and physical condition of the patient and to answer the question specifically as to whether the patient could be cared for in another type of facility. The replies to this questionnaire were tabulated with the following results.

### **Mental Condition on Admission**

There are 1,252 patients 65 years of age and older with diseases of the senium in residence on June 30, 1960. Of this number, 76% were psychotic on admission, (that is suffering from a severe mental illness characterized by delusions, hallucinations or marked deficiencies of memory and mentation.) Fifteen per cent were emotionally disturbed. In general being "emotionally disturbed" was characterized by either pathological depression or elation. Nine per cent of the total appeared not to have any mental illness or at least it was not reported in the record at the time of admission. Presumably they had had symptoms of some sort at the time of commitment. Adding the emotionally disturbed to the psy-

chotic admissions, we arrive at a total of 91% that were in need of some type of psychiatric treatment. This, in itself, contradicts the statement that most of the elderly should not have been admitted to a mental hospital. In direct answer to the question "Should this patient have been admitted to the hospital?", an affirmative answer was received in 87% of the cases. It is presumed that a small number of the emotionally disturbed, or 4%, could have stayed away or should not have been committed to the hospital, presumably because of the mildness of the emotional disturbance.

### **Current Mental Condition**

Of the 1,252 patients 65 years of age and older, it was learned that 50% were psychotic at the time the questionnaire was filled out. Forty-eight per cent were reported as not psychotic, 2% remained unreported. It thus appeared that 26% who had formerly been psychotic were now non-psychotic, indicating that hospitalization had relieved the mental condition. On the surface it would seem that this 26% should immediately be discharged since the condition for which they were admitted had been relieved, but this is not always the case. Patients often adjust in a hospital where there is a protected therapeutic and hygienic environment. They frequently show remissions of psychotic symptoms. But if they are placed in another environment outside the hospital with unfriendly or unsympathetic relatives or amongst people who do not understand their problems, they quickly begin to relapse into the former confused, bewildered and sometimes agitated mental states. This is why a visitor in a State mental hospital who is not psychiatrically oriented nearly always has the impression that a large number of

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HIRAM W. DAVIS, M.D., Commissioner, Department  
Mental Hygiene and Hospitals, Richmond.

kindly old ladies and gentlemen would not need to be in a mental hospital but could very well be in a nursing home. Younger members of the staff are sometimes misled in the same way and this may bias our statistics.

### Physical Condition

Only 15% of the patients were in good physical condition; 57% were reported in fair condition; 26% were reported in poor physical condition, and 2% were unreported. The questionnaire was not completely filled out as to whether the patients were ambulatory, possibly because it was not always an easy matter to say whether a given patient is ambulatory, ambulation often being a matter of degree. However, 10% were reported as non-ambulatory which would mean they were either confined to bed entirely or to a wheel chair. Of course, the amount of nursing care required for this type of patient constitutes a very expensive program.

### Could They Be Cared For Elsewhere?

There were 562 patients that were considered placeable outside the hospital; 429 in nursing home or domiciliary care, 103 in their own homes and 30 in general hospitals and other facilities. The 429 is approximately 34% of the 1,252 patients 65 years of age and over and approximately 4% of the total population of 11,337 as of June 30, 1962.

### Conclusion

Approximately one-third of the patients 65 years of age and older in our hospitals could be cared for in some other type of facility if such facilities were available. How expansive such facilities would be is a matter of guess work but presumably it would be much more expensive to provide the same kind of nursing care in smaller units.

A number of these patients would probably relapse back into a mentally ill condition and would need to be returned to a mental hospital or at least to a hospital providing psychiatric types of treatment.

### Special Margarines

The difference between special diet margarines and regular margarines is not very great from the standpoint of average consumption of the individual, according to the Council on Foods and Nutrition of the American Medical Association. Special margarines differ from regular margarines in having a higher polyunsaturated fatty acid content, the council said in a statement in the March 3rd AMA Journal.

The nutritional significance of the increased amount of polyunsaturates in special margarines has not been documented. On the basis of the average per capita consumption of margarine, the extra amount of polyunsaturates made available by the use of special margarine is not very great.

A comparison of six special margarines with regular margarines showed that the polyunsaturated fatty acid content of the special products was "considerably greater, in most instances more than double," that of the conventional products. However, there was little difference in the saturated fatty acid content between the two types of margarines.

There is some evidence of a possible relationship between dietary fats and hardening of the arteries.

The council also said there is no scientific evidence that the source of the polyunsaturates used in margarines has any therapeutic significance. Cottonseed, corn, soya bean, or safflower oil can serve as the source.

# *Current Currents*

HEALTH CARE FOR THE AGED: The battle over the King-Anderson bill (H.R. 4222) continues without let-up with claims and counter-claims keeping both the profession and public busy trying to keep up with this fast moving duel.

Robert R. Neal, General Manager of the Health Insurance Association of America, has said that Kerr-Mills "affords the soundest mechanism yet devised" and should be given a fair trial.

Secretary of HEW Ribicoff has continued his campaign for King-Anderson by addressing the Hartford (Conn.) County Medical Association. The Massachusetts House of Representatives also got into the act by petitioning Congress to authorize financing of medical care of the aged under Social Security.

Senate GOP Leader Everett Dirksen has declared "It's an amazing thing that we have got the time, money and facilities to publicize foreign trade, the alliance for progress, and the tax bill, but I can't find any effort to tell the aged that since September, 1960, we've had a medical care for the aged program on the books, operating in 28 states."

HEW LOBBY: AMA President Dr. Leonard W. Larson has suggested that taxpayers demand an accounting of the money spent by the Department of Health, Education and Welfare in lobbying for H. R. 4222. Speaking before the Cincinnati Academy of Medicine, Dr. Larson said that "the people have a right to know how much of their tax money this Federal agency is spending in lobbying for this piece of legislation." He also said that the National Council of Senior Citizens for Health Care Under Social Security should be required to register as a lobbying organization.

WORD TO THE WISE: Columnist Raymond Moley has recalled a statement made by Britain's Aneurin Bevin in February, 1950. When asked how he intended to get control of the British Medical Association, Bevan, who was then Minister of Health, said: "We have got the hospitals, and that means we will control the doctors. They can't practice without places to practice."

It is well to note that H. R. 4222 would control hospitals, and Mr. Bevan's words only confirm medicine's contention that the bill would place controls over the practice of medicine.

## SEAT BELTS SAVE LIVES

AMA ANNUAL MEETING: The 111th Annual Meeting of AMA will be held in Chicago from June 24-28. The new McCormick Place will provide the setting for what is being billed as the greatest and most comprehensive medical meeting ever held. McCormick Place is Chicago's new exposition center offering every conceivable convenience in one of the nation's most popular convention cities. It is a complex of unobstructed exhibit area, spacious meeting rooms, beautiful theatres, glamorous restaurants and lounges and colorful promenades adjacent to huge parking lots and enticing lagoons. All of this is just a summer stroll from midtown hotels.

See the May 19 issue of the AMA Journal for the complete scientific program—as well as advance registration form.

KING-ANDERSON REFRESHER: There are many reasons for opposing H. R. 4222. Just as a refresher, here are a few of those reasons physicians can use when writing their Congressmen:

1. There is no demonstrated need for such legislation. Laws already exist to care for those who are in need of help.
2. Help should be given to those who need it but not to those who are able to take care of their own needs.
3. It would seriously lower the quality of medical care.
4. It would result in the overcrowding and overutilization of hospitals by those who could be better cared for at home.
5. It would limit the patient's free choice of a hospital to *only* those which sign agreements with the Government.
6. Most of our aged citizens are presently covered by voluntary health insurance and more are being covered every day.
7. The total cost of such a program would be staggering.
8. It would encourage the placing of our older citizens in institutions instead of encouraging them to remain in the mainstream of our society.
9. It would produce a system which inevitably would be expanded into a full-fledged program of socialized medicine for everyone.

DID YOU KNOW? Professional nurses (the largest single health occupation) numbered about 284,000 in 1940, and there were 504,000 registered nurses in 1960.

A million gallons of milk are consumed in the City of New York every day.

# *The Medical Society of Virginia . . .*

## **Minutes of Council**

A meeting of the Council of The Medical Society of Virginia was called to order by Dr. Russell Buxton, President, at 1:00 P.M. on February 8, 1962, at Society Headquarters. Attending were Dr. Fletcher J. Wright, Jr., Dr. Guy W. Horsley, Dr. M. M. Pinckney, Dr. Harry J. Warthen, Dr. Mack I. Shanholtz, Dr. Paul Hogg, Dr. K. K. Wallace, Dr. Thomas W. Murrell, Jr., Dr. A. Tyree Finch, Jr., Dr. W. N. Thompson, Dr. Alexander McCausland, Dr. Dennis P. McCarty, Dr. James G. Willis, Dr. W. Fredric Delp and Dr. Richard E. Palmer. Also in attendance were: Dr. J. A. White, 3rd Vice-President; Dr. Vincent W. Archer, Delegate to AMA; Dr. W. Linwood Ball, Delegate to AMA; Dr. Harry C. Bates, Past-President and Chairman of the Committee on National Legislation; Dr. Fletcher Woodward, representing the Albemarle County Medical Society; and Mr. John Duval and Mr. William Miller, attorneys for the Society.

Mr. Duval opened the meeting by presenting a progress report on H. B. 395—the bill which would permit the formation of professional associations with the hope and expectation that certain tax and pension benefits could be realized. Nearly all professional groups in Virginia have been contacted in an effort to obtain their support, and the response has been encouraging. Some uncertainty exists with respect to lawyers, but no real opposition is expected from that profession. The big question is whether they will wish to be included as possible participants. A meeting of the Ethics Committee of the State Bar is expected to provide the answer. Mr. Duval stated that, all in all, chances for passage of the bill appear fairly good.

A run-down on other bills of interest to the Society was presented by Mr. Miller. Of paramount interest were those bills (S. B. 59 and 60 and H. B. 27) which would clear

the way for provisions of the Kerr-Mills law to be implemented in Virginia. He stated that a proposed amendment would require that medical services be provided by medical doctors—rather than any practitioner of the healing arts. Little, if any, opposition was expected in the Senate, but there existed some possibility that the bills might have rougher going in the House. The biggest question was whether necessary funds could be appropriated from an already overloaded budget.

Mention was made of the poor experience with Kerr-Mills reported by West Virginia. It was explained that late news releases indicated that such reports were, for the most part, in error, and that the State had not exhausted its funds.

Among other pieces of proposed legislation reviewed by Mr. Miller were bills sponsored by the Virginia Board of Medical Examiners; a bill to license psychologists (clinical psychologists are presently certified but not licensed), which is opposed by the Virginia Neuropsychiatric Society; a bill which would permit paying patients to sue charitable hospitals; bills involving sterilization; "Good Samaritan" legislation; a bill calling for investigation of programs and policies of the Medical College of Virginia; a bill increasing the amount of certain nursing scholarships; an "implied consent" bill; and a number of others.

During the discussion of the "implied consent" bill (H. B. 405), it was stated that any pathologist should have the right to conduct a blood alcohol test and should not lose this privilege through legislation. It was explained that since the Medical Examiner's Office must certify the results of such tests, private practicing pathologists must be appointed agents of the Office in order to comply with the law.

Dr. Bates then reported on the AMA Legislative Conference which was held in Chi-

cago during January. He declared that the situation, as it pertains to the King-Anderson bill, is such that physicians must become more active if such legislation is to be defeated once and for all. He went on to cover letter writing and resolution campaigns, speakers bureaus, Congressional visits, Auxiliary programs, etc. It was stated that the battle is currently being fought in the House Ways and Means Committee and that the vote is exceedingly close.

A motion which would have the President appoint a special committee to work with the press with reference to the Society's position on health care for the aged was lost for want of a second. There was some feeling, however, that members not fully informed should be careful not to make statements at public gatherings.

It was generally agreed that The Medical Society of Virginia should take the lead in any program designed to better acquaint the profession and public with the real facts surrounding the problem of health care for the aged. It was also agreed that there was a limit as to what could be done with its present income.

*It was then moved that the Executive Committee be asked to study the problem and be empowered to appropriate any funds necessary to employ a field service representative, if needed, in order to handle and expedite the Society's legislative program. The motion was seconded and adopted.*

It was then suggested that Council members write both their Congressmen and Representatives in the General Assembly, stressing the need of an adequate appropriation if Kerr-Mills is to be properly implemented in Virginia. A motion was then adopted directing that a letter be sent to the Governor endorsing Senate Bills 59 and 60 and urging that adequate funds to implement Kerr-Mills be appropriated.

Attention was directed to an excellent editorial by Dr. Delp which appeared in the January-February issue of the Virginia General Practice News. The editorial implored physicians to take advantage of every

opportunity to carry medicine's message to the lay public. It pointed out that there are daily opportunities for such action.

A statement adopted by the Lynchburg Academy of Medicine in October, 1961, was then discussed. This statement was concerned with that part of the Social Security program which involves the awarding of benefits to disabled persons covered under the provisions of the Social Security Act. It was noted that these persons often require specialty evaluations which, although under the administration of the Vocational Rehabilitation Service, have nothing whatever to do with the primary function of that agency —namely, the rehabilitation of the physically handicapped. Compensation for such evaluations has been made according to a fee schedule originally set up to pay for medical services provided in an effort to assist in the rehabilitation of the physically handicapped.

The statement went on to say that, where the evaluation of applicants for disability benefits are concerned, members of the Academy do not feel morally obligated to donate any part of their services without charge to the program, which is financed by federal funds, and which represents an insidious entry of the government into the area of the establishment of fees for medical services.

It was the recommendation of the Lynchburg Academy of Medicine that the Vocational Rehabilitation Service adopt a new fee schedule as soon as practicable—the schedule to cover all services rendered in the State of Virginia in examination of applicants for disability benefits under the provisions of the Old Age and Survivors Insurance Program. It suggested that guidance be obtained from the Medical Advisory Committee of the Vocational Rehabilitation Service and that the fee schedule be separate and distinct from the schedule employed in compensation for professional services rendered in connection with rehabilitation of the physically handicapped.

Dr. Wright and Dr. McCausland advised

Council that Vocational Rehabilitation officials are already working to comply with the recommendations of the Lynchburg Academy of Medicine, and that a new fee schedule is expected to be completed in the near future.

*A motion was then offered which would have Council acknowledge receipt of the statement of the Lynchburg Academy of Medicine and express itself as being in accord. The motion was seconded and adopted.*

Next to be considered was a telegram from the American Medical Association recommending that all state medical societies cooperate in every way possible with the recently announced National Blue Shield Senior Citizen Program. *It was moved that the National Blue Shield Senior Citizen plan be approved in principle and that attention be called to a parallel plan which has been in effect in that area served by the Virginia Medical Service Association since April, 1961. It was also suggested that every effort be made to correlate the two plans as soon as possible. The motion was seconded and adopted.* A request was then made that copies of the resolution be sent to all Virginia Congressmen.

Dr. Fletcher Woodward then presented, on behalf of the Albemarle County Medical Society, eight proposals designed to reduce the great number of deaths and injuries occurring on the highways of Virginia. The proposals covered (1) driver education; (2) licensure; (3) medical referral committees; (4) driving permits; (5) the drinking driver; (6) speed and reckless driving; (7) automotive design; and (8) a liaison committee.

It was agreed that with the 1962 session of the General Assembly nearly at the half-way point, time had become a most important factor. Dr. Woodward expressed the hope that some action could be taken this year by the General Assembly and thereby save two years in getting an over-all program under way.

*It was then moved and seconded that the proposals presented by Dr. Woodward be*

*approved in principle and that they be referred to proper authorities with the recommendation that legislation leading to a study by the Virginia Advisory Legislative Council be enacted.*

*An amendment was adopted which would eliminate proposal #8 (a liaison committee). The motion as amended was then adopted unanimously.*

The Secretary was directed to send a copy of Dr. Woodward's report to the Society's Committee on Traffic Safety for its information and follow-up. Council commended Dr. Woodward on the thoroughness of the proposals and agreed that he should consult with his representative in the General Assembly as soon as possible.

Council then considered a recommendation from the Society's Insurance Committee that a savings and retirement program proposed by the Werber Insurance Agency of Washington be approved. The program is designed to take advantage of Keogh bill provisions should this legislation be passed by the Congress. Under the plan, the Minnesota Mutual Life Insurance Company would issue a contract to the Society guaranteeing to receive from each interested physician annual deposits ranging in amount from \$100 to \$2,500. The program would be quite flexible as far as income guarantees at time of retirement are concerned. Similar programs have reportedly been recently adopted by the Medical Societies of North Carolina and South Carolina.

*A motion to approve the plan was then adopted.*

Dr. Finch reported the results of a study made by Dr. Shamburger to determine the approximate cost of completing case reports of maternal deaths. This particular study of maternal deaths has been a long time joint project of The Medical Society of Virginia and the State Department of Health. The study revealed that the cost would be approximately \$10 per case. Some question existed as to whether Dr. Shamburger, now retired, would actually consent to direct the study—particularly since he could only be

paid a total of \$1,200 per year. It was learned that, although Dr. Shamburger could not be employed by the State Department of Health because of the age factor, certain funds were available to assist with the program.

*It was then moved that The Medical Society of Virginia appropriate \$250 to help defray the cost of the program during this fiscal year. The motion was seconded and adopted.* The Executive Secretary was requested to contact Dr. Shamburger in an effort to work out necessary details.

Dr. Warthen informed Council that a question had been raised as to whether the Virginia Medical Monthly should continue to accept tobacco advertising. While it was agreed that there were definitely two sides to the matter, the feeling prevailed that the Society should not move too hastily in a situation of this kind.

A motion was then made and seconded that the policy of the Virginia Medical Monthly with respect to tobacco advertising remain unchanged. *A substitute motion was then introduced calling for the matter to be tabled. The substitute motion was seconded and adopted.*

Considered next was a letter from Dr. Earle Morgan requesting that the Society give serious consideration to sponsoring and supporting in Virginia the 16th National Essay Contest of the Association of American Physicians and Surgeons. During the ensuing discussion, it was mentioned that the Society had given its approval to the essay contest in past years but had not supported it financially.

*It was moved that Dr. Morgan be advised that the Society will endorse the contest this year but will be unable to help it financially since no funds have been budgeted for such purpose. A cash prize, however, will be considered for next year. The motion was seconded and adopted.*

Dates and possible locations for the 1965 Annual Meeting were next considered and it was agreed that, if the normal rotation were followed, Richmond would be in line

for the meeting that year. A letter from the Hotel John Marshall stated that the dates of October 10-13 were being held until a decision was reached.

*It was moved and seconded that the 1965 Annual Meeting be held at Richmond's Hotel John Marshall from October 10-13. The motion carried.*

The advisability of once again sponsoring a luncheon in Washington for Virginia's Congressional delegation was discussed. It was agreed that the luncheons had been most worthwhile in the past, and should be continued if at all possible. It was also agreed that the Executive Secretary should contact the Washington office of AMA for advice as to the proper time.

Council heard a request from the Pharmaceutical Manufacturers Association that the Society adopt a resolution in opposition to the Kefauver-Cellar bill (S. 1552). Since the Council did not have too much information at its disposal, *it was moved that the request be referred to the Executive Committee with power to act as it thought best. The motion was seconded and adopted.*

Next on the agenda was the consideration of a definite vacation and sick leave policy for members of the staff. The thought was expressed that some study should be given to policies currently in effect in the Department of Health and other allied and similar organizations. *It was moved that the matter be referred to the Executive Committee for study and such action as it believed advisable. Any policy adopted would be retroactive. The motion was seconded and adopted.*

There followed a discussion of the reported need of additional scholarship and loan programs for medical students. The idea of a revolving loan fund seemed to be most popular. When it was learned that the Committee on Medical Education favored such a fund, *it was moved that the committee study the need further and offer a concrete proposal at the next Council meeting. The motion was seconded and adopted.*

Further consideration was given the Com-

munity Service Award proposed by the A. H. Robins Company. It was reported that the Public Relations Committee had endorsed the idea. After some discussion *it was moved and seconded that the proposal be tabled for the time being. The motion carried.*

Next on the agenda was consideration of the PRN prescription problem and Council was pleased to learn that the Society's Advisory Committee to Medical and Allied Organizations had discussed the problem in some detail with representatives of the Virginia Pharmaceutical Association. Brought out was the fact that the law, for the most part, views a completed prescription as a cancelled check and that a PRN is actually an invalid designation. The law requires a pharmacist to obtain permission of the physician before refilling a prescription. Council agreed that a symposium on the subject should be considered for the Annual Meeting and that articles in the Virginia Monthly would also have great value. *A motion to refer these suggestions to the Program Committee and the Editor of the Virginia Medical Monthly was seconded and adopted.*

A request from the Arthritis and Rheumatism Foundation for Society approval of a proposed registration of arthritis sufferers was then considered. There was some question as to whether the drug store was actually the proper place for such a registration to be conducted. It was the consensus that more detailed information was needed before attempting to reach a final decision.

*It was moved that as much information as possible be obtained before the next Council meeting. The motion was seconded and adopted.*

Dr. Thompson then discussed a series of radio programs being presented in his area. The physicians in that area have endorsed the programs and have cooperated in every way possible. The programs, designed with public service in mind, are produced with the assistance of other allied groups. Council commended the physicians in Dr. Thompson's area for their work in connection with

the programs and gave the project enthusiastic approval. It was also agreed that pharmacists are strong allies and should not be left out.

Serious discussion was given to the possible need of a dues increase some time in the near future. As Society activities have increased it has become increasingly apparent that the average income of \$19 per member would not permit the Society to operate in the black. The break-even point has been reached and the proposed new activities in the field of legislation will undoubtedly result in deficit financing. A number of thoughts were expressed concerning what a proper increase might be. A question was also raised as to whether it might be well for the Virginia Medical Monthly to feature an editorial on the subject.

*It was then moved that the Finance Committee be requested to investigate the need and to present its recommendations at the next meeting of Council. The motion was seconded and adopted.*

There being no further business, the meeting was adjourned.

ROBERT I. HOWARD  
Secretary

APPROVED:

RUSSELL BUXTON, M.D.  
President

Second Annual Conference of the Joint Council to Improve the Health Care of the Aged

Four hundred delegates from all the states of the union representing state units of the American Dental Association, American Hospital Association, American Medical Association and the American Nursing Home Association met for the purpose of focusing attention on the current social, economic and health status of the aged, to review selected medical research in aging, to present successful voluntary programs in improving health care and to encourage continued participation and cooperation of all community

health agencies in meeting the demands and needs of this growing segment of our society. The chairman of the Joint Council, who is the immediate past president of the American Dental Association, presided. Mr. Sam Jaffe, Broadway actor, motion picture star and star of the current TV medico-drama *Ben Casey* was the opening speaker. He stated that forty was the old age of youth and fifty the youth of old age. He said the young people don't like the old because it reminds them of the desolation which may be awaiting them. Life is the seventy year itch as desire frequently outlasts performance. Titian, the great artist, lived to be 99, Verdi 80, George Bernard Shaw 95; Picasso is living at 80 and still painting. Frank Lloyd Wright, the great architect, lived to be 80. Robert Frost and Carl Sandburg, the great poets, are still active in their 80's and, of course, Grandma Moses, who recently died, lived to be 101. George Bernard Shaw said that old age is the beginning, not the end of life. To the young the house is not a home; for the old, a home for the aged is not a home. Greater progress has been made in medical science in the last sixty years than in the 5,000 year preceding. Shaw said that too many die before they have sense enough to live. Mr. Jaffe, who is probably in his seventies, presented a living example of vigor in the seventh decade. Dr. John G. Myers, professor of economics at the University of Colorado, spoke on *The Economic Status of the Aged*. He offered the interesting observation that as income increases older people tend to live separately and yet they may have lower standards of living actually because of this separate dwelling. It is the conscious choice of the aged to live alone, even at the cost of lowering this standard of living. Many consider living substandard if they cannot live alone, regardless of their income. He stated we should take a long look at published economic status of the labor force. Temporary bad times tend to swell the so-called poor,

but the aged themselves have a more stable income from pensions, social security and stored up equities of a lifetime. The aged have smaller expenditures than the young except during illness. He felt that about twenty per cent of the aged needed some help but only ten per cent actually needed government help. There is a sharp drop in the relation between the income of the aged and their need. Wives outlive husbands more and longer, but more critically thirty per cent of all aged persons are widows. The income is more unequally distributed in the aged than in any other group.

There are encouraging factors in the future economic status of the aged in that there is increased number of working wives. There is a rise in the formal education as times goes on. A half of the present population over sixty-five have less than one year of high school, whereas half of those over twenty-one have more than four years of high school.

Dr. Robert H. Dovenmuehle, who is a research coordinator, Center for the Study of Aging, Duke University, spoke on *Aging Versus Illness*. He reported on the study of 180 people over sixty who were seen twice in the course of the study. Twelve per cent of these showed definite physical improvement, fifty-two per cent of them showed no signs of brain disease of those who were labeled chronic brain syndrome. Many were associated with mental problems, some of which are reversible. He felt that many of those who were supposed to have brain disease were so labeled because of a deterioration of their interest in their environment and a withdrawal from life, and that many of these could be helped by getting them back into the stream of social activity.

Dr. John Flack Burton, chairman of Council on Medical Service and Committee on Indigent Care of the AMA, spoke on *Medical Assistance for the Aged*. He said that thirty states have or are about to have passed enabling legislation. Twenty-one are in effect already to accept the Kerr-Mills bill provisions from the Federal Govern-

\*This Conference was held in Chicago, December 15 and 16, 1961.

ment. In January 1960, 12,700 persons were covered by this medical aid to the aging, in December 1960, 46,400, in August 1961, 59,000, so that more and more people are availing themselves of this aid to the needy aged. He stated that more emphasis was being placed on the high cost items for temporary help in those who receive medical assistance.

Mr. George Heitler, representing Blue Cross-Blue Shield, stated that the aged spend twice as many days in hospitals as the rest of the population and fifty per cent of those 65 years of age and older have Blue Cross. A third of people past the age of 65 have incomes of less than \$2,000, whereas half of the single aged have incomes less than \$1000. There are 17,000,000 people in the United States aged 65 and over and it is predicted that in 1980 this number will be increased to 24,500,000. The State of Texas has recently put 200,000 old age assistant recipients on Blue Cross. This is the first State to use this method of underwriting their cost for this category. Eight Blue Cross plans are experimenting with home care. He felt that medical care of the aging could not be solved by one approach. He felt that industry had some responsibility for its retirees as well as for its workers. Dr. Henry S. Blake, chairman of the National Blue Shield Plan, said that 3,250,000 people sixty-five years of age are covered by Blue Shield. The first Blue Shield was established in California in 1939. By 1946 there were 1,800,000 participants, in 1949 12,000,000 and now there are 45,000,000 individuals covered by Blue Shield. 7.1 per cent of the total population is now covered by Blue Cross. In 1958 there were only four plans for covering people past the age of 65. Now fifty-one of the sixty-nine plans cover non-group persons over sixty-five. This, he stated, was conclusive proof that the job can be done by voluntary means. He urged that a continued search be for flexible approach as opposed to a government which would be inflexible as it would depend on legislative

action, which is slow, and political expediency, which is unpredictable.

Dr. Dixon, vice-president of the California Dental Association, explained the emerging dental plans. There are four which have been considered: first, the individual enrollment, which has not proven practical at present; the automatic enrollment of groups as the second approach and, third, the bank post-payment plan. A dental supply company of Pennsylvania has offered a dental plan to its employees in which twenty-five dollars is paid for each patient for the first year out of his own funds and ten dollars of his own funds the second year. Ninety-two per cent of the dentists of York County participated in this plan. The premium was \$100 per year per family, which was paid by the organization. In California 219,000 were covered under state welfare program. The Mechanics Bank of Alameda County, California, introduced a dental plan in which seventy per cent of the dental care was guaranteed for the plan and thirty per cent for the patient with the dentists taking some financial risk. There are some dental benefits to be gained under the Medical Assistance for the Aged Act. This, of course, depends on the states.

Dr. Joseph Witt, chairman of the New York State Joint Council to Improve the Care of the Aged, emphasized the preventive approach, consisting of an educational campaign which is put on by the New York County Medical Society. Information in the form of circulars and forms was centered on the rehabilitation of the hemiplegic. Annual physical examinations were urged. A physician's guide to the older citizen was published and a symposium on health maintenance was held throughout the state. Another educational campaign consisted of emphasis on the mental health of the aging, another on diabetes in aging. He felt that we had just begun to scratch the possibilities of education of the general public in this field.

Dr. Rorem, executive director of hospital planning of Allegheny County, Pennsyl-

vania, emphasized the importance of determining community needs before new hospitals are established. He suggested that larger hospitals might have subdivisions of their facilities in a new area rather than erecting an entirely new and expensive, completely equipped hospital. He stated that the average older patient sees a doctor five times a year and that one in ten goes to the hospital during the year. He stated that the aged were just like everybody else but more so because they have taken longer to get there. He said there was a great potential for elder care sitting for older patients who could not be left alone. This was a field where other senior citizens could take an active part.

Dr. Gerald St. Marie, member of the Connecticut Joint Council to Improve the Care of the Aged, a dentist, gave a very interesting talk on *The Dentist Goes to the Patient*. He said that the health field was the third largest industry in the country. New equipment has been developed by the dental profession designed so that it could be carried up five flights of stairs by a 100-pound dental technician. This new equipment, which was demonstrated at the Conference, consisted of portable electric drill, electric suction, portable headrest to be applied to the back of a wheelchair or straight chair and a headlight to be worn by the dentist for illumination. He felt that research is but one cylinder of the health service motor, that education, skills and actual service were needed to make any progress.

Probably the outstanding paper of the Conference was called *Service Tailored to Need* by Dr. Lawrence J. Rossi, medical director of the Hopedale Hospital, Hopedale, Illinois. He stated that when he went to Hopedale as a young practitioner he became very discouraged because there were no hospital facilities. He said he was about to pack his belongings and leave, but he thought he would tell the townspeople his reason for leaving; namely, that there was no hospital where he could practice the type of medi-

cine for which he was trained. To his surprise the good people of Hopedale met and decided they would build a 20-bed hospital. A hundred businessmen met together with him and in eighteen months a 20-bed hospital was built. He found out that many of the patients, particularly the old ones, would not leave the hospital and, therefore, were taking valuable beds which were needed for others. Because of this, he again went to the townspeople and a 40-bed nursing home was constructed. This soon became completely occupied within a year. Then he went back to the businessmen and proposed that a home for the aged be built. This was done and through refinancing and with the help of the Home Loan Association, from which they borrowed \$400,000.00, a 60-bed home for the aged was built. He said the financial condition was sound and that they were paying off at the rate anticipated by the Home Loan Association. He had high praise for this group of businessmen and particularly to the Home Loan Association for their vision and willingness to use money in this way. He said this emphasized the fact that when free people were properly motivated they could provide the necessary facilities for their town without any help from the government, using private resources. He showed many pictures of this new group of buildings and it was an inspiring story.

Reverend Granger E. Westberg, associate professor of religion and health, medical and theological faculties, University of Chicago, told of a regular session in which doctors and ministers met to discuss their common problems. He spent most of his time dealing with one of the most important areas in which these two disciplines meet; namely, in the management of the grief syndrome. He stated that grief following death, divorce, health loss or the loss of a child through marriage was first attended by shock, then emotion relief, then utter depression and isolation, then by physical symptoms of distress, by panic, guilt, hostility, inability to return to usual life activities, until finally the grief-stricken person

became aware of his unrealistic behavior and began to readjust to reality. He felt that both the doctor and the minister understanding this syndrome could be very helpful in reassuring the person who was grief-stricken that these were the normal, natural, human reactions to grief.

Dr. Frederick C. Swartz, chairman of the committee on aging, American Medical Association, stated that five per cent of people who come to the doctor's office have no organic disease and only twenty per cent have organic disease with symptoms to fit. He talked on the pro side of flexible retirement and stated that on the doctor's standpoint retirement should be flexible and not rigidly geared to age sixty-five. However, on the other side of the coin Dr. Gordon F. Streib, professor of sociology and director of the Cornell Study of Occupational Retirement, speaking from the standpoint of the sociologist stated that retirement should be considered from the points of view of the individual, the family, the work situation and, finally, the community and society at large. He felt that compulsory retirement was better for the new technology and older people should be willing to make a sacrifice to society if retirement was in its best interest and that he did not consider this as an inhuman treatment of the aged. So far as the work organization was concerned, the needs and the prerequisites of this particular organization should be considered and he felt that chronological retirement was best for it as it enabled them to recruit younger men who could look forward to promotion and to a definite retirement period. He felt that there was also something to be gained for the family because the family could plan for a definite time at age sixty-five. He pointed out that higher income people usually do not enjoy retirement as much as lower income people, which emphasizes the idea that it was the attitude toward retirement which was most important. He felt that retirement at age sixty-five might actually be beneficial for some people for they would select new positions different from

their old. He cited the case of a college professor who retired at sixty-five from one college, went to another where he retired again at seventy and finally went to a third where he retired at eighty-three. Even at this age he said he would look for another job.

Dr. Joseph A. Falzone, senior surgeon of the gerontology branch of the National Institutes of Health, spoke on *Senescence, Organ Function and Loss of Cells*. He stated that between the ages of twenty and ninety breathing capacity was decreased sixty per cent, whereas ulnar nerve function was declined only twenty per cent. Renal function declined fifty per cent. He stated that the BMR declines with age. Studies show that intracellular water metabolism does not change but the number of the cells do. Muscle mass is lost. Muscle cells are replaced by fat and connective tissue. The liver is one exception to this as there seemed to be no cellular loss in the liver as it is able to replace itself. Just what kills cells is not definitely known. Some, the epithelial cells, die in order to function. There seems to be a relationship in the death of cells to certain enzymatic losses. A new enzyme called cathepsin declined sixty per cent by the age of sixty-five. This is one of the enzymes that splits proteins into amino acids. There seems to be a loss of cells by increase of hydrolysis over synthesis. This may be due to an enzyme called lysosome. The pigments noted in aged muscles are thought to be destructive products of lysosome activity.

Some of the topics under investigation research were given by Dr. Deming of the Albert Einstein College of Medicine. He stressed the fact that research which may not seem to benefit the community at present may later do so. He being a research man made the statement that a medical student recently graduated is able to treat ordinary diseases such as pneumonia, coronary thrombosis and appendicitis better than the seasoned practitioner. I felt that this was a rather broad statement for a research physician, who had never practiced,

to make. Few practicing physicians will agree with this statement. He said the broad fields under investigation were the care of the aging and chronically ill, the study of the aging process and the biology of growth and natural aging. In rehabilitating the infirm and aging he said that more evaluation of intensive technics was under study, and also an evaluation of the delay in seeking medical care. Chronic pulmonary disease, such as emphysema, is under study to determine its precursors. Fifty-two per cent of the deaths last year were due to cardiovascular disease. The subject of cholesterol and metabolism is still poorly understood, as is also the lipoproteins associated with it. They have found that lowering of blood pressure seems to slow the effect of cholesterol in producing atherosclerosis in rats, whereas high blood pressure increases this effect. Studies are being made on the genesis of prostatic hypertrophy. Other studies consist of why one kidney hypertrophies when the other is taken out, the structure of collagens, the aging of the red cells, the movements of water across membranes, human genetics and the culture of mammalian cells and viruses.

Dr. Chinn spoke on *Some Advances Toward the Understanding of Long-Term Illness in the Elderly*. He stated that there was a definite relationship between the health in the aged and long-term illness. There were definite physical, mental and sociological interdependencies. Studies were being made on the index of independence as related to daily activity, to social function and he demonstrated how such things as strokes and fractures of hips could cause not only physical illness but mental illness and loss of relationship not only to the family but to the community at large so that a major illness of this type could cause the elderly patient to retreat into further and further dependency until he became bedridden and completely dependent on others for contact with life.

Dr. Ring of the University of Miami School of Medicine, spoke on *Regulatory*

*Mechanisms and Aging*. He said that one cell protozoa represented by the paramecium in aging cultures divided more slowly if the nuclear were not rearranged whereas bacteria went on indefinitely unless their nutrition was disturbed. In multicellular animals he discovered that regeneration of the liver is slower in the old. Experiments with rats showed that the metabolic rate increased at lower temperatures and removal of the hair in the adult rat caused death in the old rat unless thyroid was given. Cold does not increase thyroid activity. The function of the islets of Langerhans decreased with age and finally fail with stress. Thirty per cent of acromegalics have diabetes. The stimulation of red cell function diminishes with age. Fragility of cells in old rats increases with age. Studies are being made on the effects of the aging and fertility. Efforts are being made to determine whether it is the environment of the ovum and the sperm or the cells themselves which affect the product of union.

Dr. William J. Putman, dental consultant, division of chronic diseases United States Public Health Service, spoke on *Advances in Research on Dental Care for the Aged*. He stated that dental caries was the most widespread of all chronic disease, that all disease reflects disease in the body. He stated that after the age of thirty, twenty-five per cent of teeth are lost because of caries, fifty per cent are lost because of gum disease. Among causes of the loss of teeth were faulty nutrition, hormone imbalance, premature aging caused loss of teeth. He stressed the importance of an early start in caring for teeth. Many functions of the body are improved by good dental care. For instance, failure to ingest food is frequently due to dental effect. Restoration of the face and speech are important in the patient's whole health outlook. He stated that still a very small per cent of our population see dentists regularly. He again emphasized that a breakdown between research and practice should not take place but it is up to

the research scientists to convey his ideas to the practitioner.

Dr. Robert H. Dovenmuehle of Duke talked again about areas of research which are being carried on at his institution. In addition to those previously mentioned, he mentioned psychophysiology, economic and sociologic aspect of aging. He says that thirty per cent of all admissions to mental hospitals were over sixty-five years of age and thirty per cent of the residents of mental hospitals, which comprises a half of our total bed capacity in the United States, were over sixty-five.

Dr. Edward L. Bortz, past president of the American Medical Association and president of the American Geriatrics Society, closed the meeting with a very inspiring address. He stated that half of the new theories of medical science were proved to be wrong between the time a medical student entered medical college and the time he graduated. He felt that education was the key to our problem rather than government intervention. He stated that he was asked to write for a national publication on "how to stay young" but he replied he could not write such an article because he was not interested in arrested development. He felt there were four areas in the study of the aging that were important: the molecular area, the clinical area, the psychological area and, finally, the spiritual one, as man is made

a little lower than the angels. He felt that the present medical profession and other allied professions were the architects of the twenty-first century and he felt a rising expectation of man in this era. Arthur Brisbane once said, "When a man retires out of life, life retires out of him." He recommended several interesting books; among them "What Price Medical Care" by Price, published by Lippincott and a book called "Fellowship for Freedom in Medicine" published in Great Britain by John and Sylvia Jukes. Again he made a plea for freedom of thought, freedom of action, freedom from government control in working out the many problems of the aging and he felt that if we were given sufficient time that in the end a more worthwhile program could be developed for the aged in which they would participate themselves and not become dependent upon a paternalistic government.

This whole conference was so different from the White House Conference that it was refreshing and inspiring and I hope that all of the delegates carried home with them the renewed hope that the problems of the aging can be solved by free men in a free manner to the best interest of society as a whole.

JOHN P. LYNCH, M.D.

*Chairman of the Virginia Joint  
Council to Improve The Health  
Care of the Aged*

## Guilford County's Self Study

SURVEYS to uncover unmet need for medical care are difficult to make and difficult to interpret, but a study made a few years ago in Guilford County, North Carolina, had many interesting features. Although the study was designed and the results compiled by a consultant trained in such procedures, the information came from local agencies, ministers and physicians. No house-to-house canvass was made.

This study, which was concerned with the care of chronic illnesses, involved physicians in two ways. An agency reporting an individual with a chronic illness was asked to record the name of a physician to whom this individual was known. The physician was then sent a form requesting that he check the information given and to indicate further services recommended for the patient. Physicians returned 96% of these inquiries.

Physicians also received blank forms with the request that they report all private patients with a chronic illness seen during a month's period. Data were obtained from 71% of the physicians.

A participation such as this indicates a high degree of community education and preparation before beginning the study. It should also indicate a spirit of cooperation necessary to activate changes recommended by the study committee.

In this particular study no need was evident for more physicians or more general hospital beds. The primary recommendation was for coordination of chronic disease care activities. Mention was also made of the desirability of improving the home care program and of establishing a convalescent-rehabilitation center in an existing institution.

In summary the report of this study pictures a community taking a look at itself through its own eyes and then trying to solve its problems through local effort.

ENNION S. WILLIAMS, M.D.

# *Society Activities . . .*

## **Hampton Medical Society.**

Dr. Lionel M. Lieberman has been elected president of this Society, succeeding Dr. Philip F. Murray. Dr. John Hughes has been named vice president and Dr. John M. Quarles secretary.

## **The Virginia Society of Internal Medicine,**

At its meeting on February 17th, made the following minimum qualifications for admission which would entitle the applicant also to membership in the American Society of Internal Medicine:

- (a) A physician who either is certified by the American Board of Internal Medicine or who is a member of the American College of Physicians, or, in exceptional circumstances, a physician who has limited his practice exclusively to Internal Medicine for five years must, if he be graduated after 1936, include credit for at least three years of approved hospital training suitable for accreditation in Internal Medicine after internship and, in addition, show evidence of at least two years of exclusive practice in Internal Medicine.

Those who wish to become members should contact a member of their locality or write directly to the chairman of the Membership Committee, Dr. James G. Willis, 1200 Prince Edward, Fredericksburg.

Newly elected officers of the Society are: President, Dr. James M. Moss, Alexandria;

president-elect, Dr. Ernest Scott, Lynchburg; vice-president, Dr. James Willis, Fredericksburg; secretary-treasurer, Dr. John Edgar Stevens, Richmond; and members-at-large, Drs. R. Bryan Grinnan, Norfolk; Emmett C. Matthews, Richmond; and McKeldon Smith, Staunton.

The next annual meeting will follow the American College of Physicians' luncheon at the Sheraton-Park Hotel, Washington, D.C., on October 16th.

## **The Tri-State Medical Association**

Of the Carolinas and Virginia has decided to hold their annual meeting during a summer month so that families can be included in the program. The 1962 meeting will be held at the Carolinian Hotel at Nags Head, North Carolina, June 10-13, under the presidency of Dr. Malcolm H. Harris, West Point.

Full information may be obtained from the secretary, Dr. R. B. Davis, 122 South Greene Street, Greensboro, North Carolina.

## **The American Medical Women's Association**

Extends an invitation to all women physicians attending the annual meeting of the American Medical Association to be their guests at a brunch on Sunday, June 24th, at 11:00 A.M., at the Essex Inn.

There will be a panel, with audience participation, on Medical Woman Power—Can It Be Used More Efficiently?

For further information, write the American Medical Women's Association, 1790 Broadway, New York 19, New York.

# News . . .

## New Members.

The following new members were admitted into The Medical Society of Virginia during the month of March:

Silas Robert Beatty, M.D., Radford  
John Victor Bowyer, M.D., Hopewell  
Michael Anthony Corrado, M.D., Sterling  
Richard Wine Dodd, M.D., Richmond  
Charles Little Echols, Jr., M.D.,  
Charlottesville  
John Francis Heath, M.D., McLean  
Walter Jackson Helm, M.D., Winchester  
John Winston King, M.D., Norfolk  
Reinald Leidelmeyer, M.D., Fairfax  
Daniel Nathan Mohler, M.D.,  
Charlottesville  
John Franklin Morris, M.D., Lynchburg  
Louis Elmo Richard, M.D., Petersburg  
Anthony Warren Rucker, M.D.,  
Stanardsville  
Delfin Bautista Salazar, M.D.,  
Falls Church  
Colvin Wood Salley, M.D.,  
Newport News  
William Rathborn Thornhill, M.D.,  
Richmond

## Dr. Mulholland Honored.

An endowed chair in the department of internal medicine of the University of Virginia School of Medicine has been established in honor of Dr. Henry B. Mulholland, a member of the faculty for forty years. Endowment of the chair came in gifts from hundreds of University alumni and friends of Dr. Mulholland. It now totals half of the goal of \$500,000.

## The American Medical Association.

Each year at this season it is customary for the president of the American Medical Association to extend an invitation to all American physicians to attend the AMA's annual meeting. Each year it is also expected of the president to state that "this year's meeting will be the best yet." The 1962

Annual Meeting June 24-26 at Chicago will be an excellent scientific session that will offer much solid, comprehensive information that will be of great value to those in the practice of medicine.

The program for the meeting is scheduled for publication May 19 in the Journal of the AMA. Theme of the meeting will be "Medicine in the Atomic Age." This is a broad, generalized theme that covers everything in medicine. And that is just what the scientific program will do.

The twenty-one sections concentrating on the medical specialties are pooling their talents and resources to bring the top men in the nation to deliver papers in areas such as Nuclear Medicine, Mental Health, Tissue Transplantation, Inflammatory and Ulcerative Diseases of the Small Intestine, Inhalation Therapy, Clinical Cardiology and Anticoagulant Therapy, and Diagnostic Problems and Exfoliative Cytologic Methods.

## Dr. Fredric Delp,

Pulaski, has been appointed a staff doctor for the Veterans Administration Hospital in Salem. He has been in general practice in Pulaski since 1935.

## Dr. James M. Moss,

Alexandria, has been promoted to Clinical Professor of Medicine at Georgetown University, Washington. He has been Director of the Diabetic Clinic of the Georgetown University Hospital since 1949.

Dr. Moss' new monograph on Fundamentals of Diabetic Management is being released by Charles L. Thomas Company this month.

## Grant to Medical College of Virginia.

An unrestricted \$5000.00 grant for medical research has been presented to the Department of Surgery of the College by Wyeth Laboratories. This award is one of twenty made annually by the Philadelphia

pharmaceutical manufacturer to further medical research by medical schools and hospitals.

### Drs. Karnitschnig and Salley.

Drs. Heinz H. Karnitschnig and John J. Salley of the Chief Medical Examiner's Office, the Commonwealth of Virginia, have been awarded the "Outstanding Civilian Service Medal" by the Department of the Army for their outstanding work in the identification and pathological studies of 77 servicemen killed in an air disaster near Richmond on November 8, 1961.

### Juvenile Rheumatoid Arthritis

The cooperation of physicians in nearby areas is requested in a comprehensive study of juvenile rheumatoid arthritis (Still's disease) recently reopened at the Clinical Center, National Institutes of Health, Bethesda, Md. The study, conducted by the National Institute of Arthritis and Metabolic Diseases, consists of an intensive search for a possible causative micro-organism.

Juvenile rheumatoid arthritis is characterized by single or multiple joint inflammation beginning prior to age 14. The systemic reaction is frequently severe with high fluctuating fever, generalized adenopathy, splenomegaly, weight loss, pleuritis, pericarditis, evanescent salmon-pink rash, leucocytosis and elevated ESR. Children with severe systemic manifestations, especially those early in their course, are particularly suitable for this study.

Accepted patients will be studied for several weeks. A comprehensive and individualized therapeutic program will be instituted for each patient to include appropriate medication, physiotherapy, and supportive measures. Upon completion of their study, patients will be returned to the care of their referring physicians who will receive a complete narrative summary. Occasional follow-up visits may be desirable in some instances. These would supplement rather than substitute for visits to the patient's own physician.

Physicians who wish to have their patients considered for this study may write or telephone:

Dr. Joseph J. Bunim, Clinical Director, National Institute of Arthritis and Metabolic Diseases, Bethesda 14, Maryland. Telephone: 496-4181 (Area code 301). Or Dr. K. Lemone Yielding, Senior Investigator, National Institute of Arthritis and Metabolic Diseases, Bethesda 14, Maryland. Telephone: 496-2936 (Area code 301)

### Reprints Needed.

The research library of the Institute of Experimental Medicine and Surgery of the University of Montreal has suffered extensive losses owing to destruction by fire. In attempting to rebuild the library, they ask our readers to send all available reprints of their work, especially those dealing with Endocrinology and Stress.

Reprints may be sent to the Institute of Experimental Medicine and Surgery, University of Montreal, P. O. Box 6128, Montreal 26, Canada.

### Doctor's Suite Available.

In medical building at very busy, large apartment community of 10,000—with immediate surrounding area of 20,000 more. Three rooms and bath. This is a wonderful opportunity. Contact L. F. Kettel, 313 North Glebe Road, Arlington 3, Virginia. Phone Jackson 2-5004. (Adv.)

### Practice for Sale.

Pediatric Practice in Richmond's far west end. For information, write "Pediatric", care the Virginia Medical Monthly, 4205 Dover Road, Richmond 21, Virginia. (Adv.)

### Radiologist Wants Location.

Radiologist, 35 years old, Board Certified and licensed in Virginia. Five years experience. Seeking position in hospital or private practice. Write #30, care the Virginia Medical Monthly, 4205 Dover Rd., Richmond 21, Virginia. (Adv.)

## Obituaries . . .

### **Dr. Joseph Sidney Bachman,**

Pioneer surgeon of southwest Virginia and eastern Tennessee, died March 11th at his home in Bristol. He was ninety-five years of age and received his medical degree from Vanderbilt University in 1890. Long before there were hospitals in his area, Dr. Bachman performed with remarkable success many major operations in patients' homes. He was a Life Member of the American College of Surgeons and had been a member of The Medical Society of Virginia for fifty-nine years.

### **Dr. Herman David Stevens,**

Newport News, died March 20th, at the age of forty-eight. He was a graduate of Jefferson Medical College in 1938. Dr. Stevens had practiced in Newport News for several years and at the time of his death was a member of the staff of Eastern State Hospital in Williamsburg. He had been a member of The Medical Society of Virginia for five years.

His father and a sister survive him.

### **Dr. Scott.**

WHEREAS Almighty God in His Infinite Wisdom didst remove from our midst our loyal friend and co-worker in the Art of Healing, David Patteson Scott, M.D. on February 12th, 1962, the Lynchburg Academy of Medicine requests that the following resolutions be spread upon the minutes of its meeting, and that a copy be sent to his family and to the Virginia Medical Monthly.

BE IT THEREFORE RESOLVED That the Lynchburg Academy of Medicine, his co-workers, the City of Lynchburg, The Medical Society of Virginia, The American College of Physicians and his close personal friends and patients have lost one, whose character, as evidenced by the high ideals with which he practiced his profession was outstanding in every respect.

BE IT FURTHER KNOWN That during his whole professional career, he rendered that service to the physicians, friends, patients and hospitals of this community with an idealism and faithfulness to the truth and to the unbounding welfare of all who came under his care, rich and poor alike. He was a great personality.

BE IT FURTHER RESOLVED That we, the members of the Lynchburg Academy of Medicine, miss him sorely, and extend to his wife, daughter, his brothers and grandchildren our sincere and deepest sympathy, and that we feel that Divine Providence has super-vened and taken unto Itself our beloved friend and co-worker for greater happiness in the Eternal Life to which we all some day hope to be summoned.

It is with sadness in our hearts that your Committee hereby presents these resolutions to the Lynchburg Academy of Medicine for its approval.

JAMES R. GORMAN, M.D., *Chairman*

S. H. ROSENTHAL, M.D.

H. H. HURT, M.D.

The staff of the Marshall Lodge Memorial Hospital, Inc., of which Dr. David P. Scott has been an honored member, desires to place on record this tribute as an expression of respect.

WHEREAS, Dr. David P. Scott has been a much beloved physician in the science of healing in the City of Lynchburg, and whereas, our association, both professional and social, has been one of mutual admiration and respect, we the members of the Staff of the Marshall Lodge Memorial Hospital wish to recognize in writing, for future posterity, the high order of his physicianship while on this earth, and the fineness of his character.

It is our desire to spread a copy of these resolutions on the minutes of our Staff and that a copy be sent to his family and to the Virginia Medical Monthly.

F. I. HOBBS, M.D., *Secretary*

### **Dr. Adkerson.**

The staff of the Marshall Lodge Memorial Hospital, Inc., of which Dr. W. Clyde Adkerson has been an honored member, desires to place on record this tribute as an expression of respect.

WHEREAS, Dr. W. Clyde Adkerson has been a much beloved physician in the science of healing in the City of Lynchburg, and whereas, our association both professional and social has been one of mutual admiration and respect, we the members of the Staff of the Marshall Lodge Memorial Hospital wish to recognize in writing for future posterity, the high order of his physicianship while on this earth, and the fineness of his character.

It is our desire to spread a copy of these resolutions on the minutes of our Staff and that a copy be sent to his family and to the Virginia Medical Monthly.

F. I. HOBBS, M.D., *Secretary*

## **Dr. Stoneburner.**

Dr. Lewis Tilghman Stoneburner, Jr., aged 77, a beloved physician of Richmond for many years, died January 29, 1962, after a brief illness.

Dr. Stoneburner was born in Edinburg, Shenandoah County, October 28, 1884, the son of Lewis Tilghman Stoneburner and Mary Moore Wierman Stoneburner. He graduated from Washington and Lee University with a B.S. degree in Civil Engineering in 1907. The following three years he taught mathematics at John Marshall High School and also served as Professor of Mathematics in the Woman's College of Richmond. In 1910 he matriculated in the Medical College of Virginia from which he graduated in 1914. Later he became Assistant Professor of Clinical Medicine at the Medical College of Virginia and held this position for many years.

Dr. Stoneburner was a devoted member of Centenary Methodist Church, serving on its Board of Stewards for forty years. He was also chairman of the Property Committee.

He had been a member of the Richmond Academy of Medicine since graduation and was one of its most regular attendants. He also held membership in The Medical Society of Virginia and the American Medical Association.

Dr. Stoneburner served on the Richmond Academy of Medicine's Advisory Committee to the Richmond Memorial Hospital, and was on the Executive Committee of that institution.

He organized the Medical Arts Building Corporation, and was its secretary until his death.

His eldest son, Dr. Lewis T. Stoneburner, III, while serving as a Captain in the United States Army Medical Corps, was reported missing in action during a flight over the Mediterranean, and was never found. The Stoneburner Lecture series at the Medical College of Virginia was later established in his honor by his comrades in the 45th General Hospital.

Dr. Stoneburner, Jr., is survived by his wife, four sons, a daughter, and a brother, Dr. Ralph W. Stoneburner of Edinburg, and 22 grandchildren.

WHEREAS Almighty God in His infinite wisdom has called to Him Lewis Tilghman Stoneburner, Jr., M.D., who has been a member of the Richmond Academy of Medicine for forty-seven years, and who has ably served this Academy and this community in the practice of medicine with devotion and sincere interest in his patients and mankind in general; and

WHEREAS his passing is a tremendous loss to the Academy and community because of the love and esteem in which he was held by his fellow physicians, patients, and citizens of this Community; now,

BE IT RESOLVED that the sympathy of the members of the Richmond Academy of Medicine be extended to the family of the late Lewis Tilghman Stone-

burner, Jr., M.D., and that a copy of this resolution be sent to his family, that a copy be spread upon the minutes of this meeting, and also that a copy be sent to The Medical Society of Virginia for publication in its official organ The Virginia Medical Monthly.

HENRY W. DECKER

HARRY J. WARTHEN

ARTHUR S. BRINKLEY, *Chairman*

## **Dr. Mitchell.**

It is with deep sorrow that the Newport News Medical Society records the passing of Dr. William Alfred Mitchell, Jr., who died suddenly on February 24, 1962. He is survived by his wife, two sons, and his mother and father, all of Newport News.

WHEREAS it is timely for the members of the Newport News Medical Society and his professional colleagues of many years to pay tribute to his memory by the adoption of this resolution:

Dr. Mitchell was born in Newport News on August 27, 1914. He attended the public schools of this city and graduated from the College of William and Mary in 1934. His medical degree was obtained from the University of Virginia in 1938. He served his internship at St. Francis Hospital, Pittsburgh, Pennsylvania. His residency training in Pediatrics was obtained at the Medical College of Virginia Hospital and was completed July 1, 1941. While in Richmond he met and married his wife, the former Miss Ella Walker Hill of Roanoke, Virginia. In August 1941 he began his highly successful and outstanding practice of Pediatrics in this city. Dr. Mitchell was a former Rotarian and a strong churchman, being on the vestry board of St. Andrews Episcopal Church and had recently been appointed Junior Warden. He enjoyed membership in both local Medical Societies, The Medical Society of Virginia, Seaboard Medical Society, The Southern Medical Association, The A.M.A., the Virginia Pediatric Society and was a Fellow of the Academy of International Medicine. He held membership on the staffs of Riverside and Mary Immaculate Hospitals and was always willing to devote time and energy to the hospitals and to all staff functions. He was thought of as one possessing a keen mind and good sense of humor.

WHEREAS his passing is a great loss to our medical society, the entire community and his great host of young patients and because of the high esteem in which he was held by his fellow physicians and the community itself:

NOW, THEREFORE, BE IT RESOLVED that the Newport News Medical Society on this 13th day of March 1962 convey to his family our deepest and sincere sympathy and that we record these resolutions as a memorial for our high regard and love of our former colleague, William Alfred Mitchell.

BE IT FURTHER RESOLVED that copies of this resolution be sent to his family, be spread on the minutes of this society and a copy also be sent to the Virginia Medical Monthly, the official publication of our State society.

F. N. THOMPSON, M.D.  
THOMAS C. LAWFORD, M.D.

### Dr. Bickford.

WHEREAS, Dr. James Van Allen Bickford, Jr., a member of the Norfolk County Medical Society, died on September 15, 1961, and

WHEREAS, we his colleagues of long standing, who recognize in his passing, a great loss to the profession and to the community, wish to pay tribute to his memory by the unanimous adoption of this resolution:

Dr. Bickford was born in Hampton, Virginia, in 1904. He graduated in 1924 from Virginia Military Institute. He received his medical degree from the Johns Hopkins University in 1929. He interned at Johns Hopkins Hospital from 1931 to 1933 and spent his residency years at Johns Hopkins Hospital and Bellevue Hospital in New York City. He then spent a year as a research fellow at Rockefeller Institute in New York City. He came to Norfolk in 1934 and was a widely known pediatrician until his retirement in 1960. Dr. Bickford had served as chief of Pediatrics at Norfolk General Hospital and at Leigh Memorial Hospital. He was a member of the Norfolk County Medical Society, Virginia Pediatric Society, Tidewater Pediatric Society, American Medical Association, and the Pithotomy Club of Johns Hopkins University. For many years, he was a member of the advisory board to Juvenile and Domestic Relations Court. After retirement from practice he continued his association with the medical staff of the Norfolk City School Board.

WHEREAS he had faithfully practiced medicine in Norfolk for over twenty-five years, and

WHEREAS, we, his fellow members of the Norfolk County Medical Society, unite with his many friends and grateful patients in deeply regretting his passing, and

WHEREAS, we felt that he was our good friend and we respected his abilities and valued the association highly,

NOW, THEREFORE, BE IT RESOLVED by the Norfolk County Medical Society on this the 6th day of March, 1962, that we convey to his family our deep respect for his memory and wish it known that we deeply regret his passing.

BE IT FURTHER RESOLVED, that a copy of this Resolution be sent to his family, a copy to the Virginia Medical Monthly, and a copy to be preserved as

a part of the permanent records of the Norfolk County Medical Society.

Norfolk County Medical Society  
Resolutions Committee  
DR. JOHN O. RYDEEN, *Chairman*  
DR. SYDNEY COREN  
DR. CHARLES P. BROWN

### Dr. Gordon.

Dr. Faith Fairfield Gordon was born March 18, 1898, in Spokane, Washington. She was educated in the grammar schools and high school in Massachusetts. She attended Bates College and Boston University. She graduated in 1918. She received her M.D. at Boston School of Medicine in 1923. She was on the staff at Westboro State Hospital, Brighton Memorial Hospital, Boston Psychopathic Hospital, Worcester Memorial Hospital, and Northampton State Hospital. At these clinics and hospitals she completed her internship and residency in psychiatry. She attended the Institute for Juvenile Research for her year's training in child psychiatry. She was associated from September, 1926, to June, 1929, with Smith College, and in the summer time from 1927 to 1938 was a lecturer at Smith College. In 1927 she was married to Hugh M. Gordon. From September, 1930, to July, 1933, she was a psychiatrist at North Carolina College for Women. She was a psychiatrist to the Family Service Society in Richmond, Virginia from 1934 to 1938. From 1938 to 1939 she was a visiting lecturer at the University of Hawaii. She was physician and psychiatrist at Hollins College, Virginia, from November, 1939, to April, 1950. From 1950 to 1952 she was director of the Lynchburg Guidance Clinic, Lynchburg, Virginia. From 1954 to the present she was a psychiatrist at Memorial Guidance Clinic and interim director and since 1957 the clinical director. In her long and varied career she has written many articles, participated in the production of two movies on the autistic child. Her son, Herbert Gordon, assisted her in the production of the two movies. She was friend, counselor, and physician to very many of her colleagues. She was Board Eligible in Psychiatry. She was a member of the First Unitarian Church, the Virginia Neuropsychiatric Association, the American Orthopsychiatric Association, and gave consultation to many of the community agencies in Richmond.

Her untimely death leaves an irreplaceable loss to those of us who knew her and to the community at large. She will long be remembered for her personality, good works, and most of all her dignity as a human being. We wish to express on our behalf to the family our sense of loss at her passing.

WILLIAM M. LORDI, M.D., *Chairman*  
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1. Sollmann, Torald: A Manual of Pharmacology, W. B. Saunders Company, Philadelphia, 1957, p. 202.

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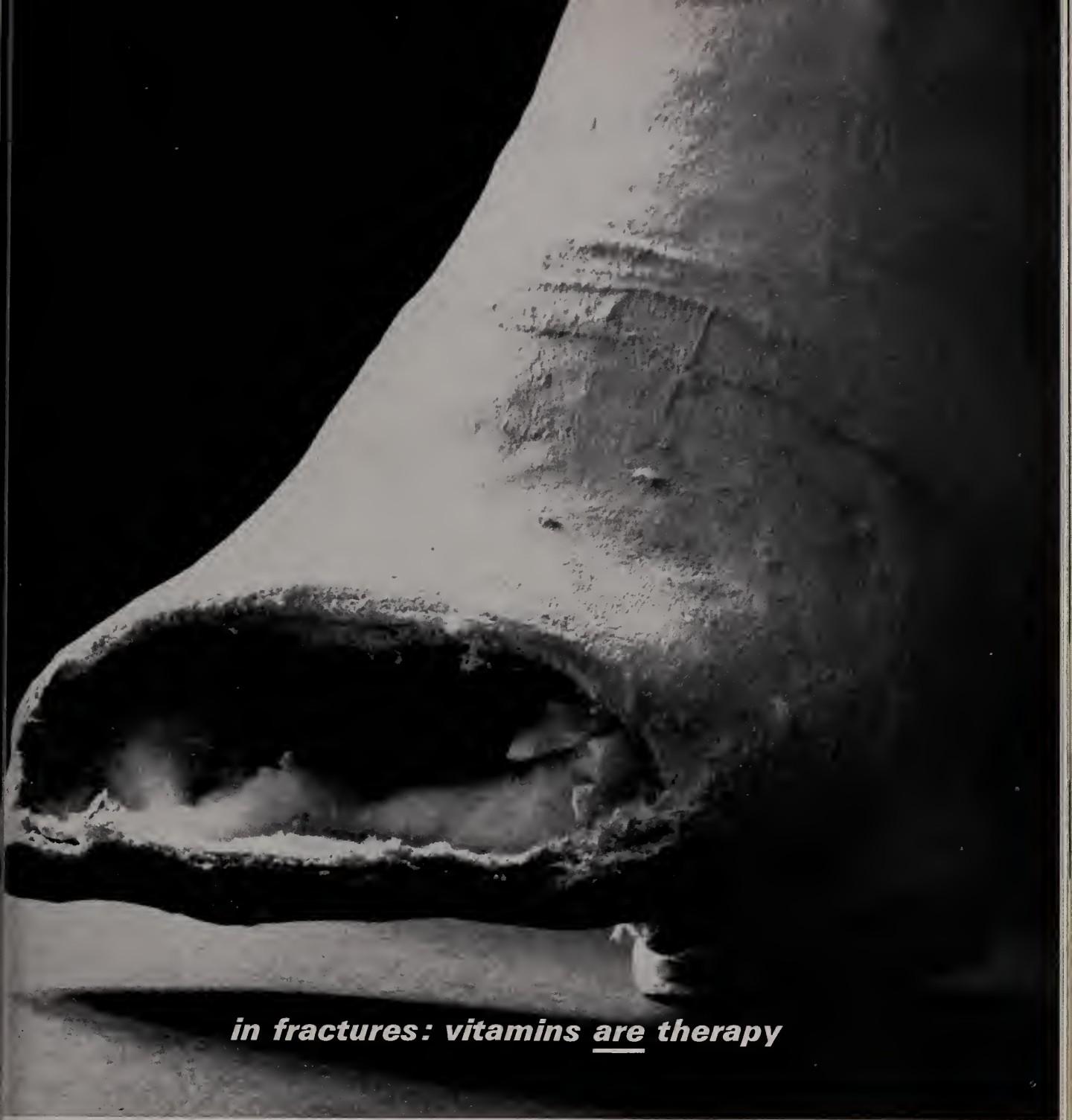
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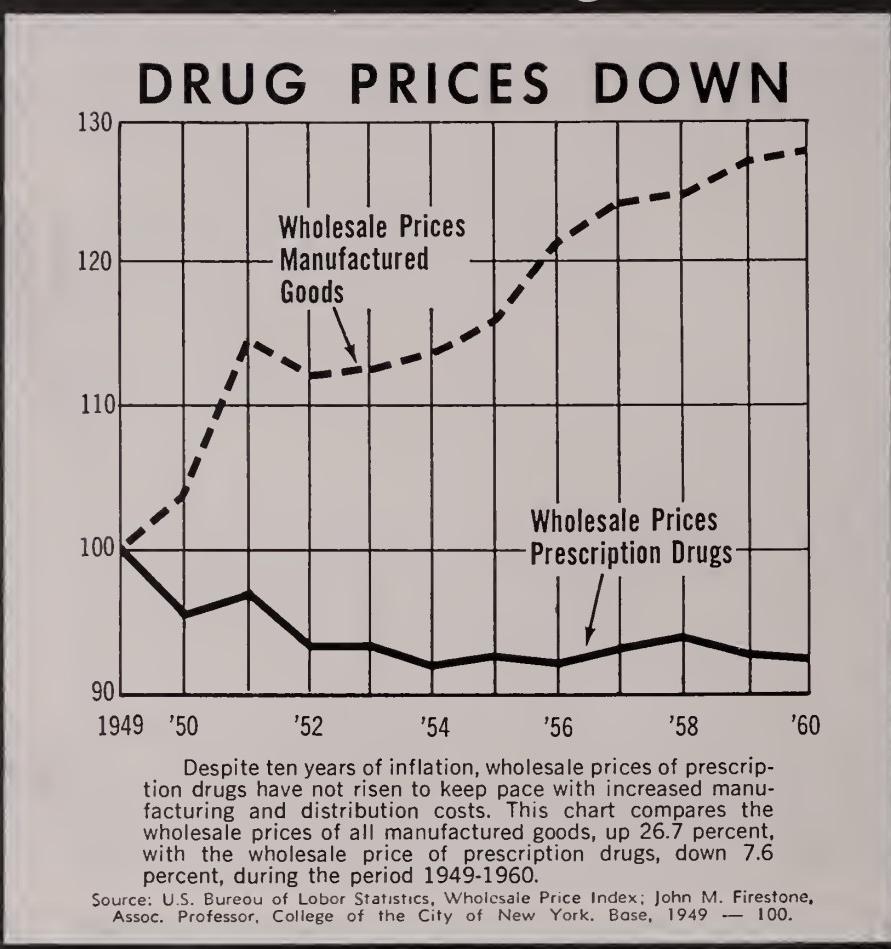
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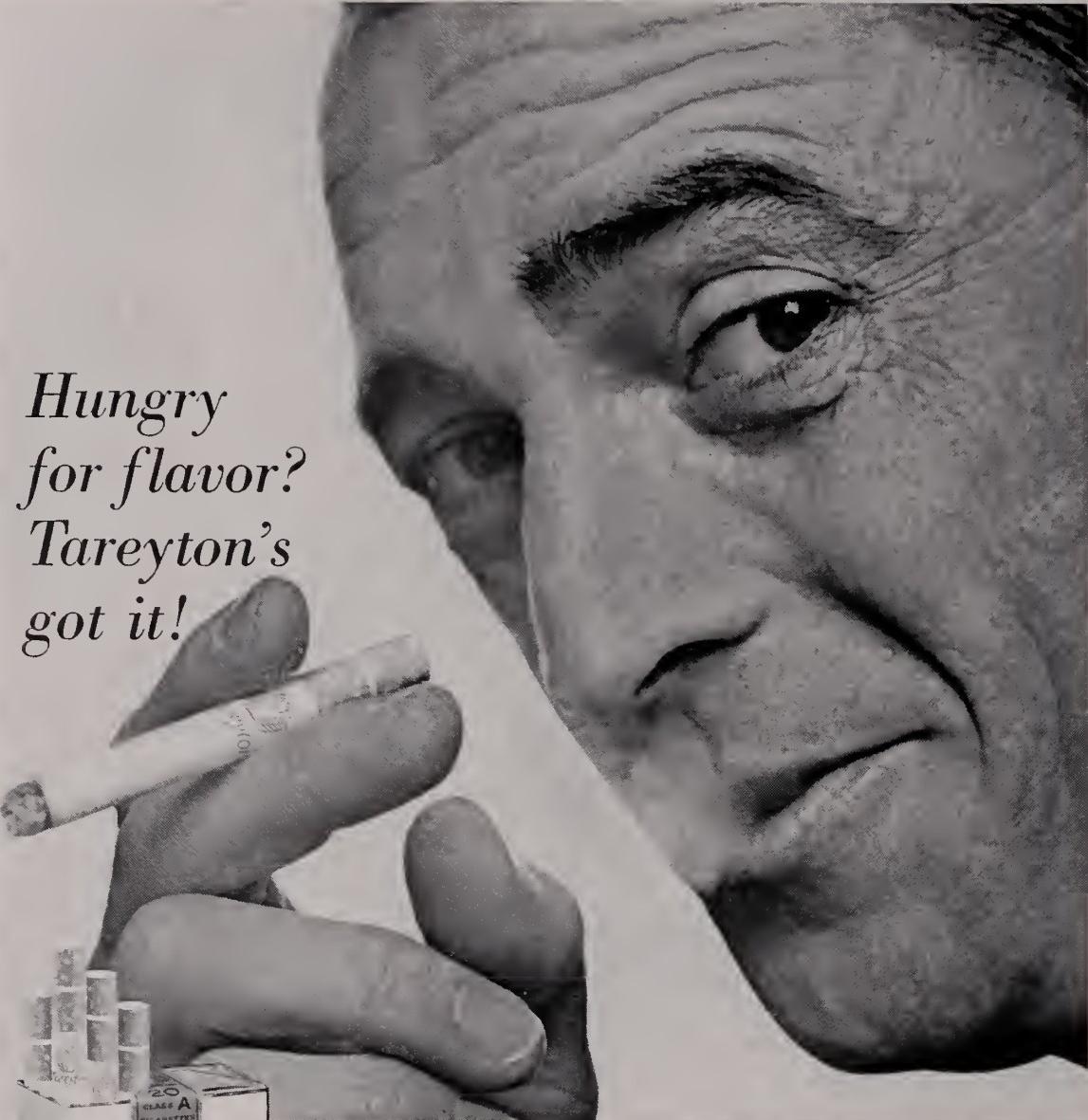
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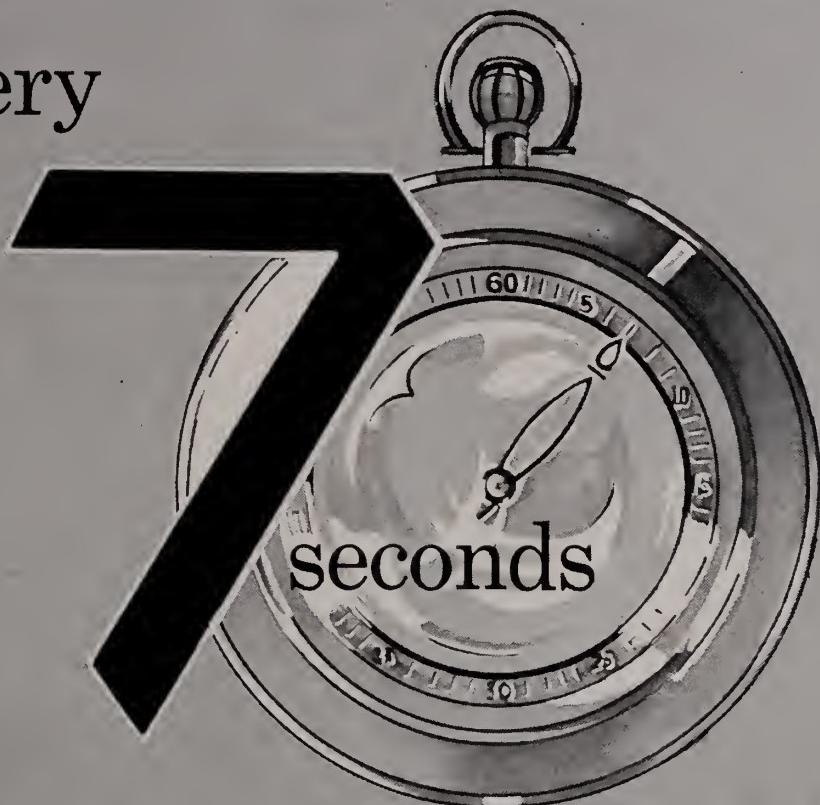
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*References:* 1. DeNyse, D. L.: M. Times 87:1512 (Nov.) 1959.  
2. Gruenberg, F.: Current Therap. Res. 2:1 (Jan.) 1960.

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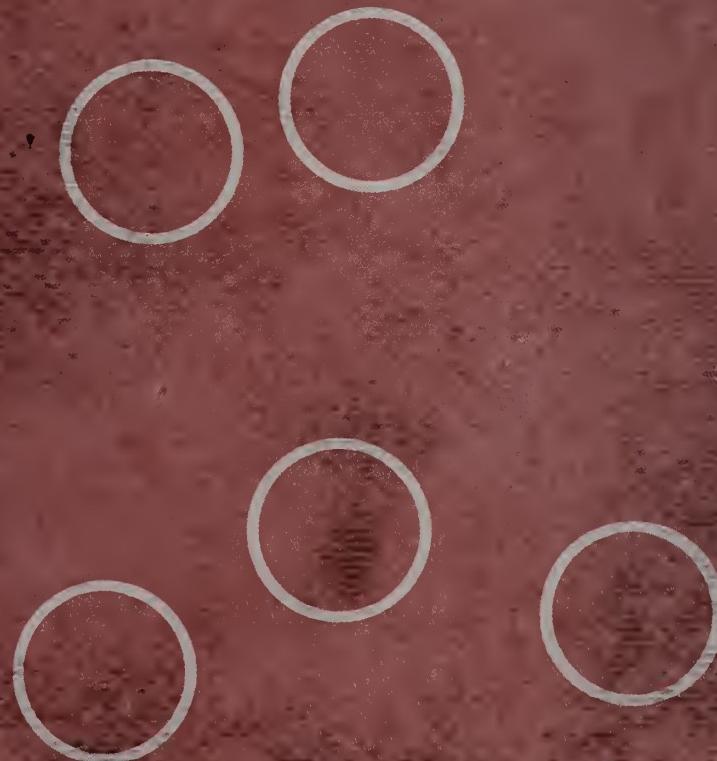
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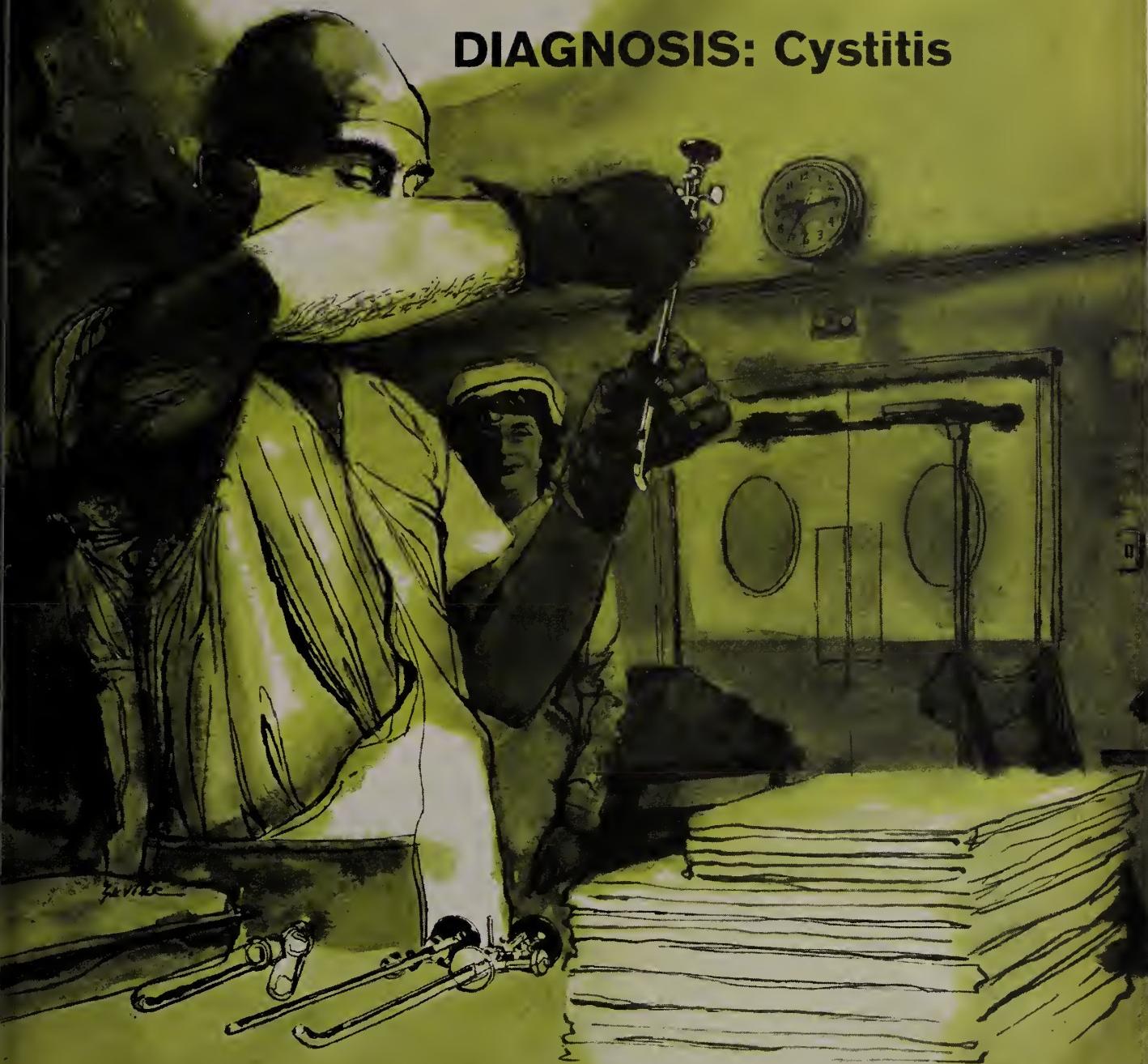
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1/4/62	8:30 AM								
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1/13/62	7:50 AM								
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# VIRGINIA

# MEDICAL MONTHLY

OFFICIAL PUBLICATION OF THE MEDICAL SOCIETY OF VIRGINIA



JUNE, 1962

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REFERENCES: (1) Roseman, E.: Neurology **11**:912, 1961. (2) Bray, P. F.: Pediatrics **23**:151, 1959. (3) Chao, D. H.; Druckman, R., & Kellaway, P.: *Convulsive Disorders of Children*, Philadelphia, W. B. Saunders Company, 1958, p. 120. (4) Crawley, J. W.: *M. Clin. North America* **42**:317, 1958. (5) Livingston, S.: *The Diagnosis and Treatment of Convulsive Disorders in Children*, Springfield, Ill., Charles C Thomas, 1954, p. 190. (6) *Ibid.*: Postgrad. Med. **20**:584, 1956. (7) Merritt, H. H.: *Brit. M. J.* **1**:666, 1958. (8) Carter, C. H.: *Arch. Neurol. & Psychiat.* **79**:136, 1958. (9) Thomas, M. H., in Green, J. R., & Steelman, H. F.: *Epileptic Seizures*, Baltimore, The Williams & Wilkins Company, 1956, pp. 37-48. (10) Goodman, L. S., & Gilman, A.: *The Pharmacological Basis of Therapeutics*, ed. 2, New York, The Macmillan Company, 1955, p. 187.

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\*Schwartz, I. R.:

*Current Therap. Res.* 3:29, Feb., 1961.

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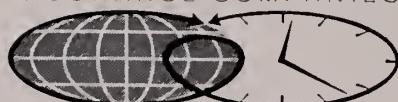
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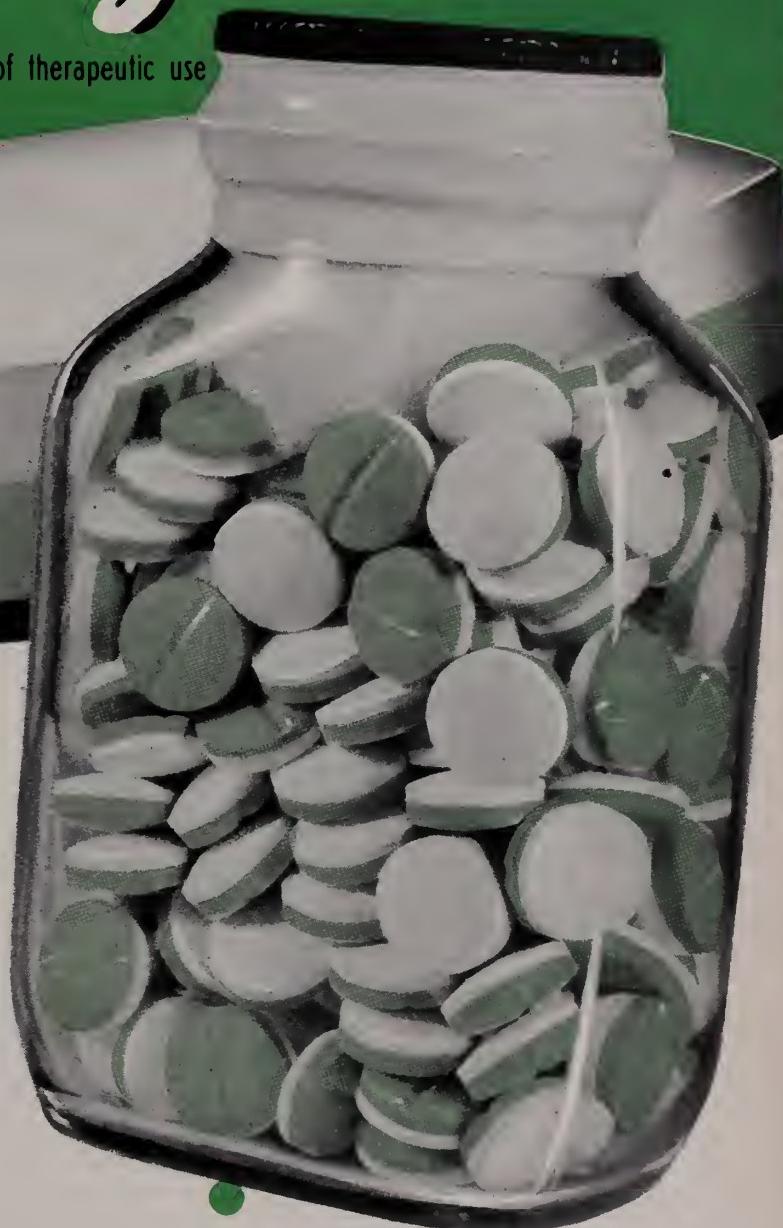
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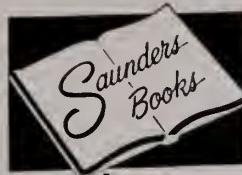
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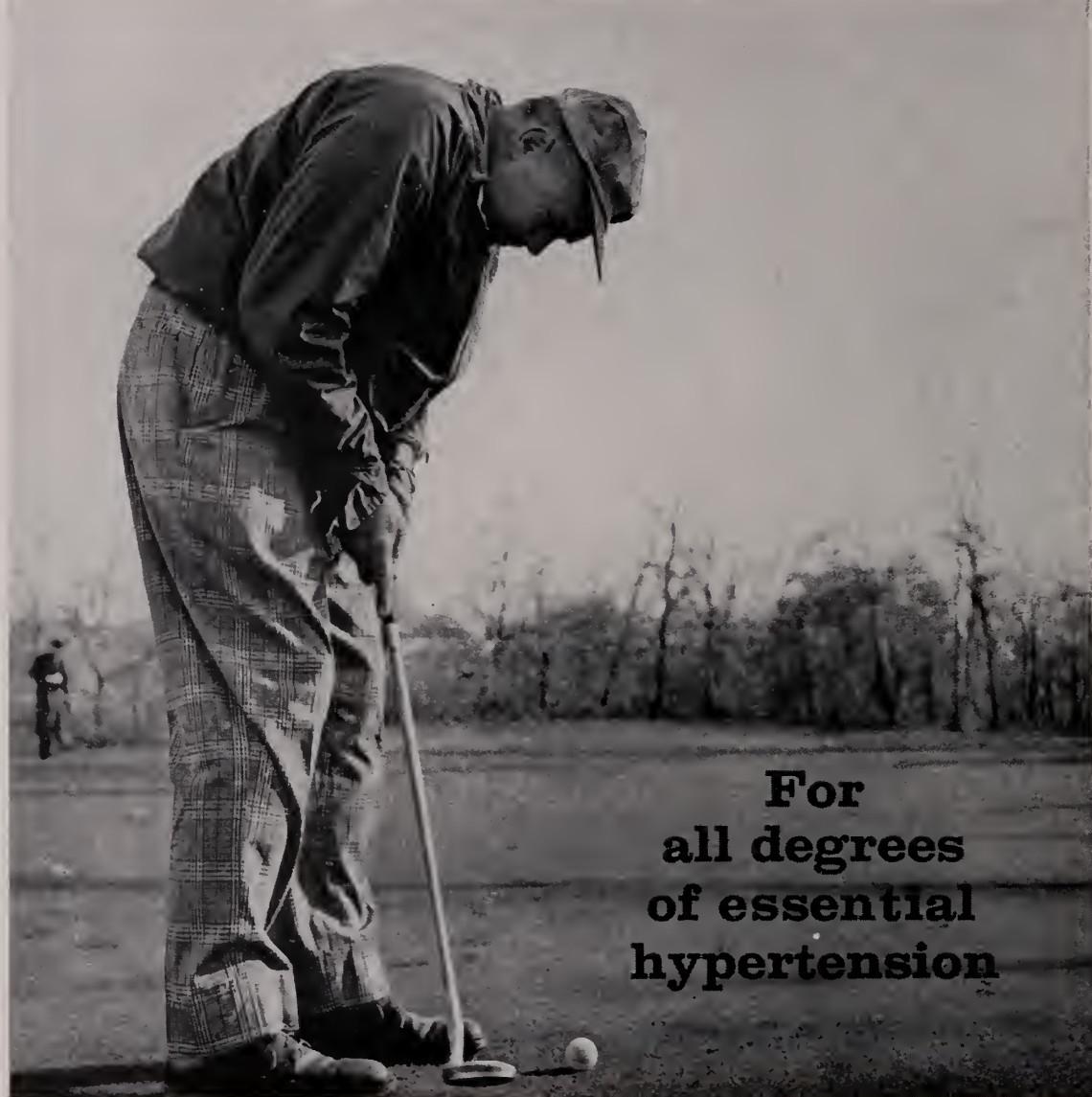
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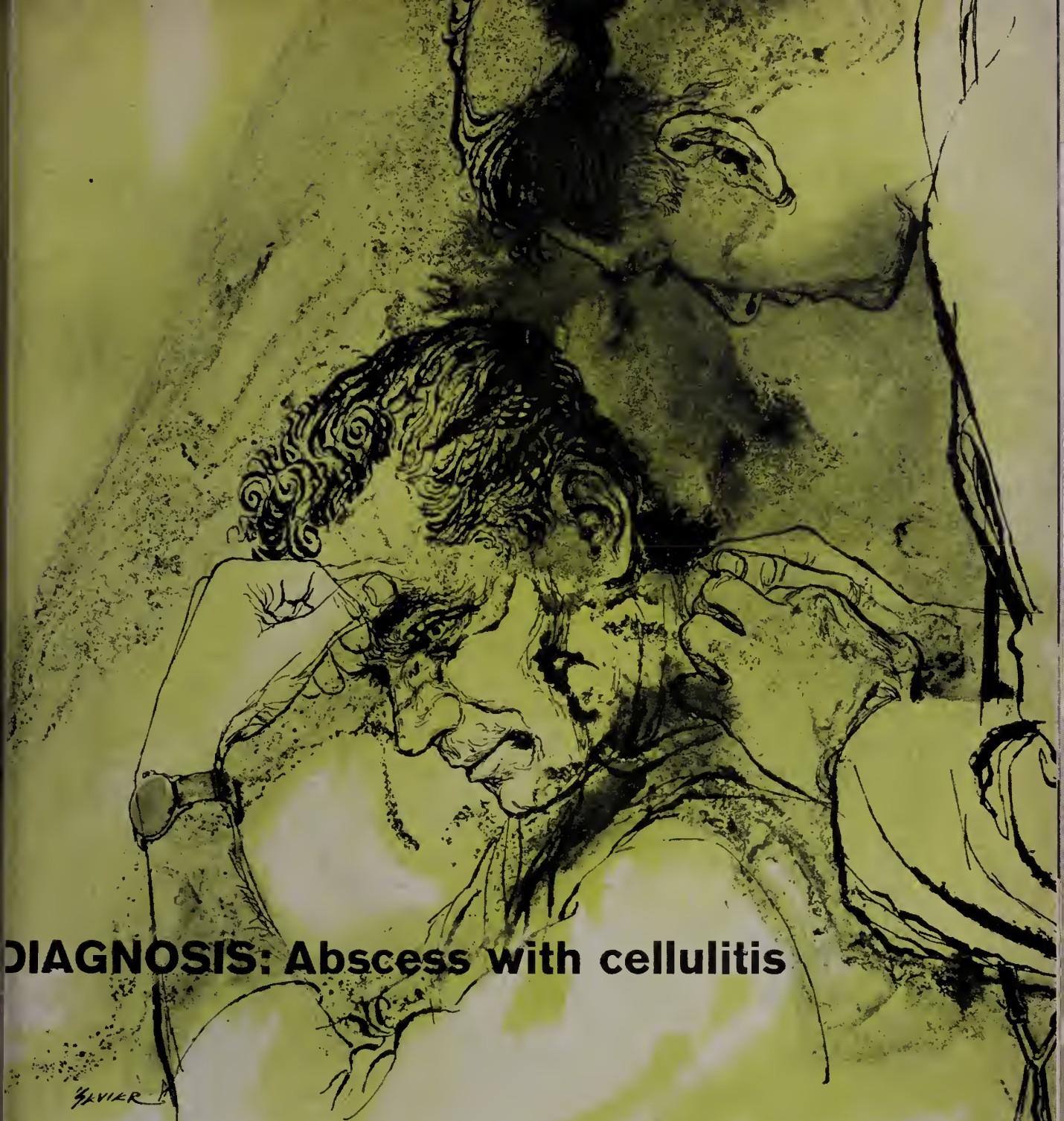
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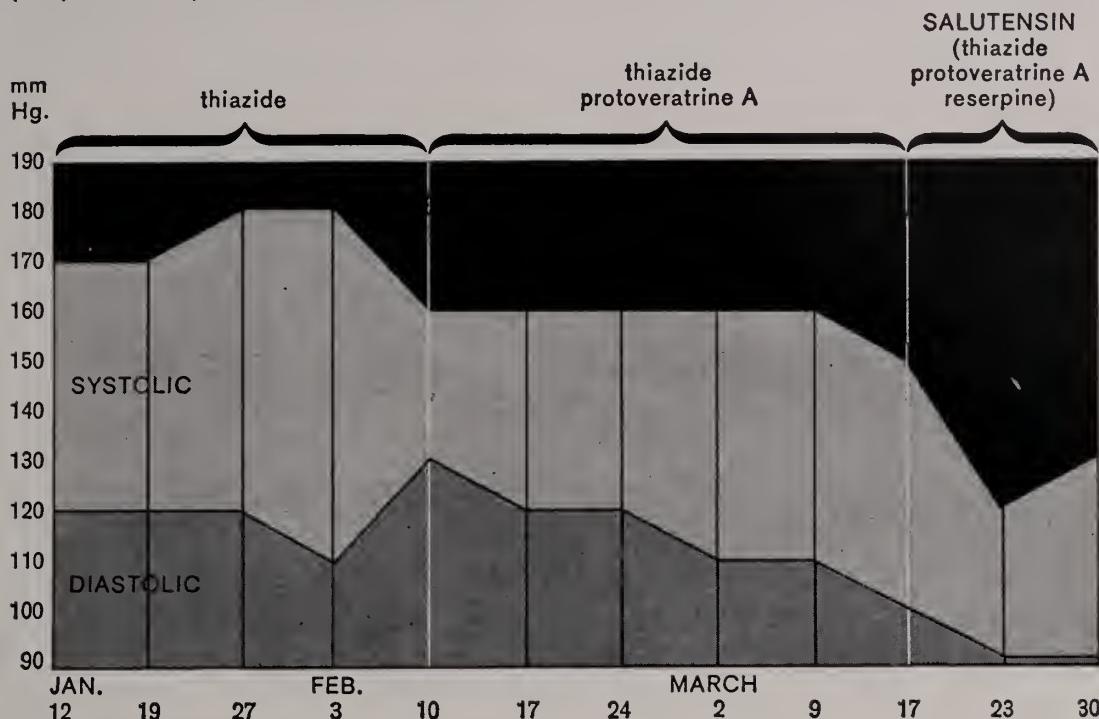
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**References:** 1. Fries, E. D.: In Hypertension, ed. by J. H. Moyer, Saunders, Phila., 1959 p. 123.  
2. Fries, E. D.: South M. J. 51:1281 (Oct.) 1958. 3. Finnerty, F. A. and Buchholz, J. H.: GP 17:95 (Feb.) 1958. 4. Gill, R. J., et al.: Am. Pract. & Digest Treat. 11:1007 (Dec.) 1960. 5. Brest, A. N. and Moyer, J. H.: J. South Carolina M. A. 56:171 (May) 1960. 6. Wilkins R. W.: Postgrad. Med. 26:59 (July) 1959. 7. Gifford, R. W., Jr.: Read at the Hahnemann Symp. on Hypertension, Phila. Dec. 8 to 13, 1958. 8. Fries, E. D., et al.: J. A. M. A. 166:137 (Jan. 11) 1958. 9. Ford, R. V. and Nickell, J.: Ant. Med. & Clin. Ther. 6:461, 1959.

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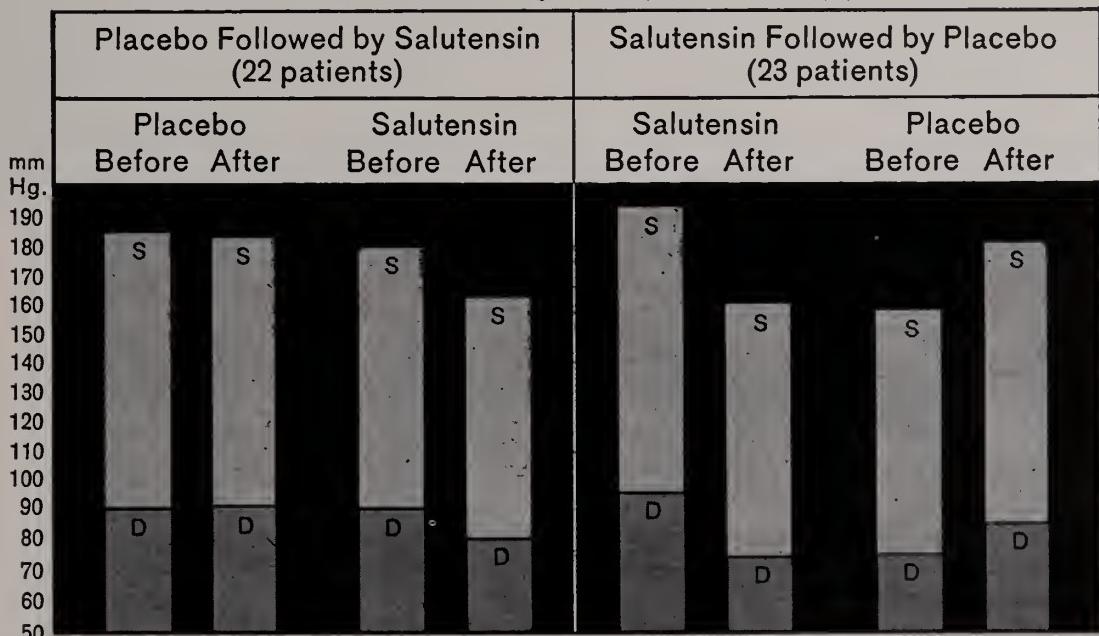
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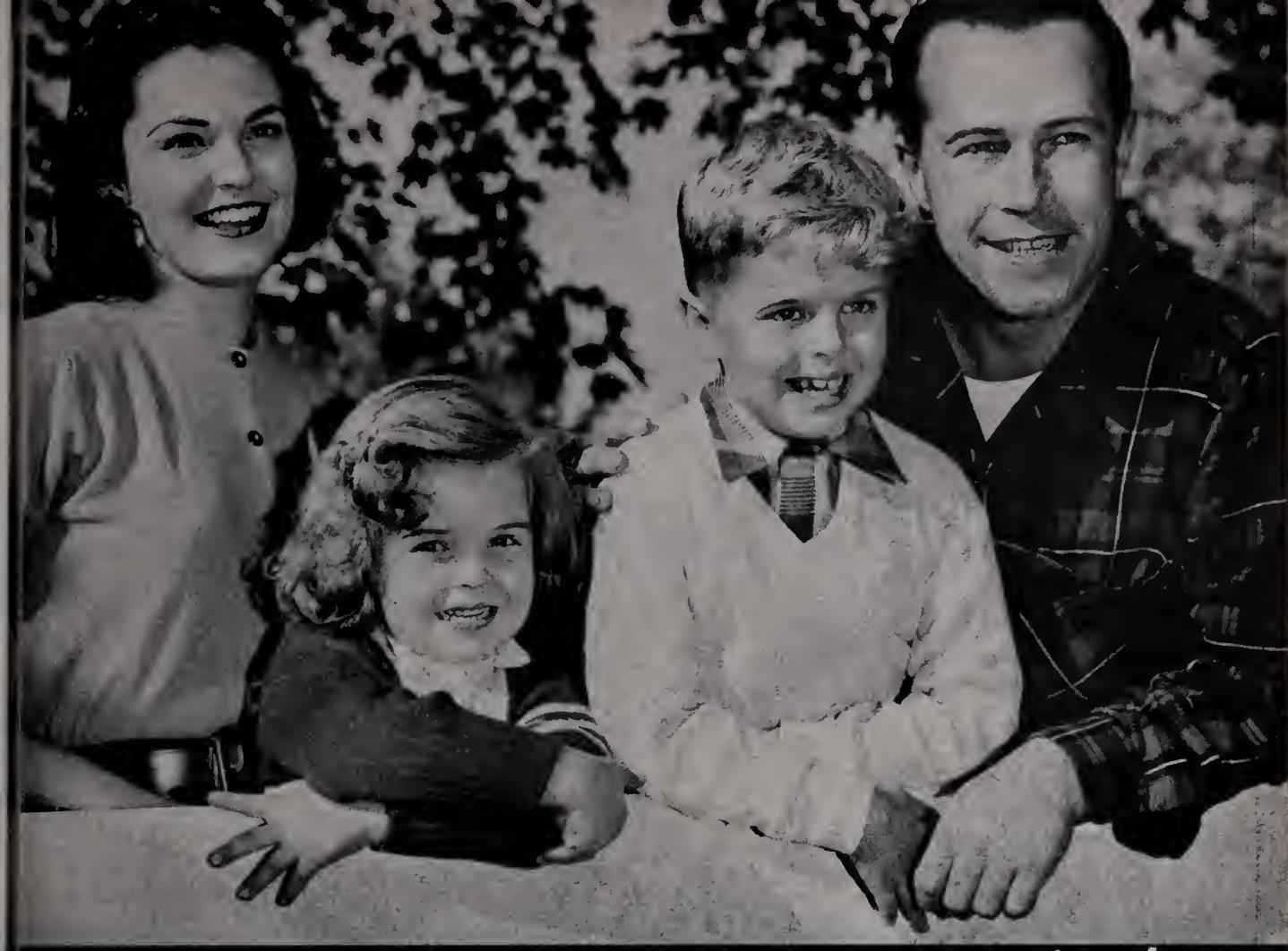
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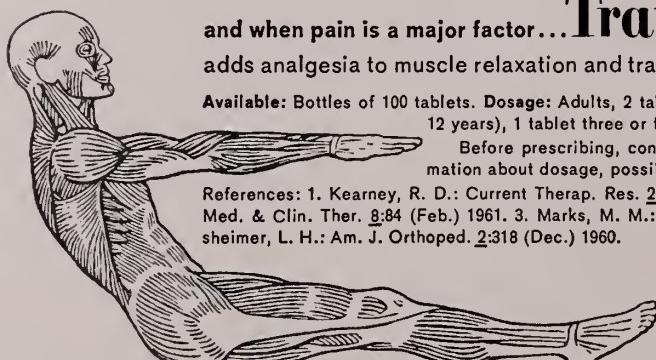
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**References:** 1. Kearney, R. D.: Current Therap. Res. 2:127 (April) 1960. 2. Cornbleet, T.: Antibiotic Med. & Clin. Ther. 8:84 (Feb.) 1961. 3. Marks, M. M.: Missouri Med. 58:1037 (Oct.) 1961. 4. Hergesheimer, L. H.: Am. J. Orthoped. 2:318 (Dec.) 1960.



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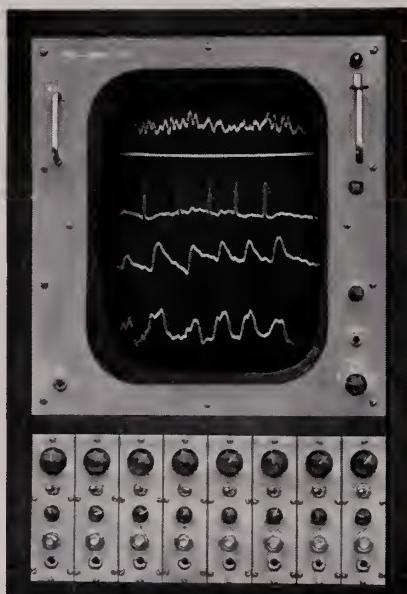
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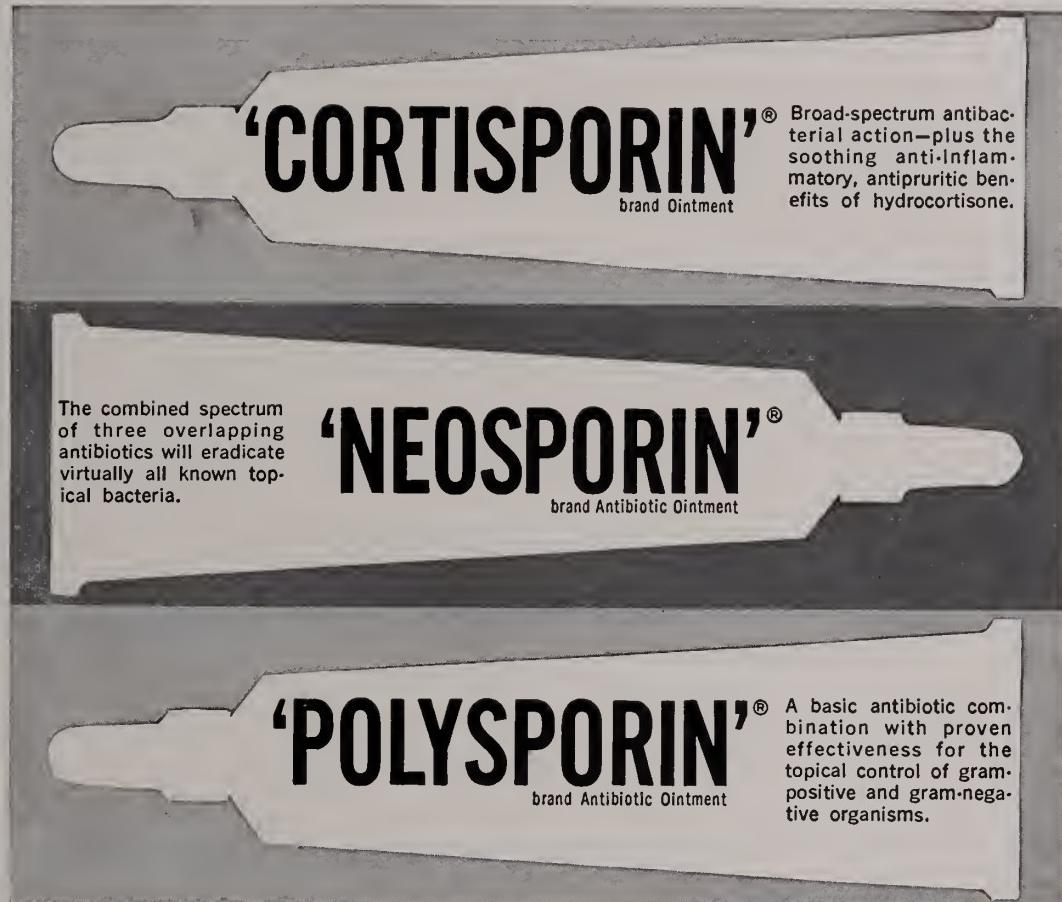


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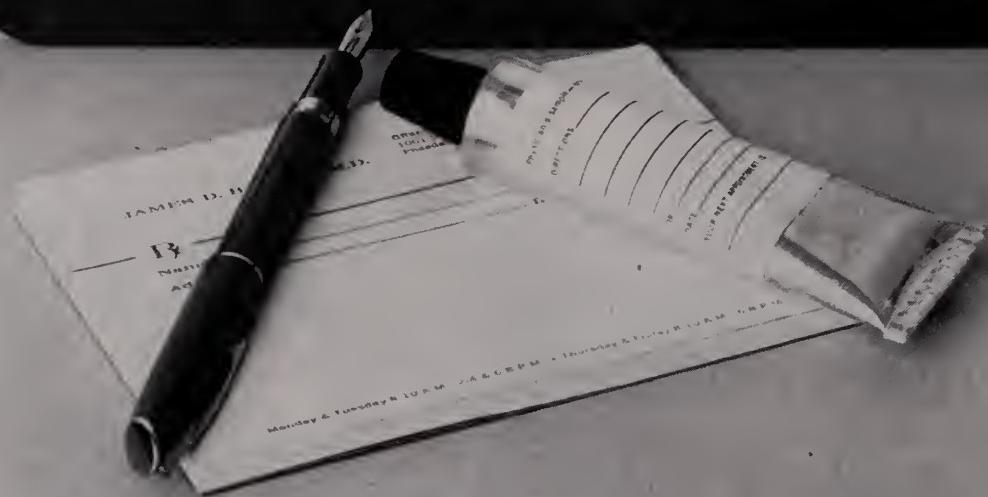
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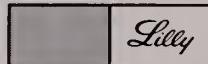




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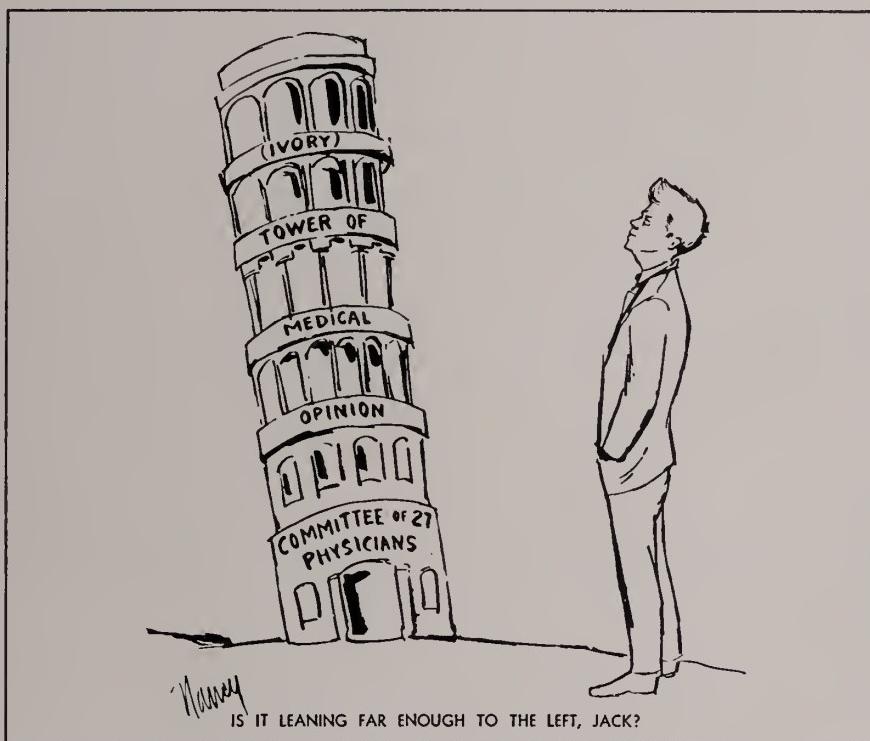
# *The Virginia* MEDICAL MONTHLY

June, 1962

VOL. 89, No. 6  
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## Guest Editorial . . .

### Beware of the Left



IF ANY PRACTICING physician had had any doubts about the attitude and actions of the present administration regarding free enterprise and free medicine, the events of the past few weeks would have opened his eyes and clarified his thinking.

First we saw the President of the United States taking out time from his important tasks, to introduce and parade before television a group of twenty-odd physicians, who expressed support for his medical care for the aged proposals. Among these so-called leaders of American Medicine there was not one doctor in private practice. There were however the heads of several Union Health Plans, and other prepaid closed groups.

We also saw assorted Deans and full-time Professors, who have scarcely left the Ivory Towers of Higher Learning to see how everyday problems affect both the practicing physician and the everyday patient.

After this shabby attempt to delude the American public into thinking that many leaders in Medicine support his program, the President then showed himself in even another illuminating attitude. Regardless as to whether the timing of the proposed Steel price increase was propitious or not, the fact remains that in our free economy in peace-time, the government usually does not dictate price policy. However the American people were treated to the spectacle of a piqued leader mobilizing the forces of the Department of Justice and the FBI to intimidate private industry into retreating from their chosen position. When we see FBI men routing journalists out of bed at 3 in the morning to interrogate them regarding interviews they had had with steel-industry leaders the day before, we see very little difference from the dreaded knock at the door by Gestapo or secret police agents.

Let the events of the day strengthen the determination of practicing physicians and of the Business Community to keep the Federal Government out of the practice of Medicine and Free Enterprise. We must hang together, as Benjamin Franklin said, or we will all hang separately!

W. LEONARD WEYL, M.D.

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Reprinted from the April issue of The Medical Bulletin of Northern Virginia. The cartoon is by Mrs. Nancy Weyl, wife of the author. She is the regular cartoonist for the Bulletin.

# An Inaugural Brief

JOHN P. LYNCH, M.D.  
Richmond, Virginia

DR. C. A. BLANTON, father of our late illustrious historian, Dr. Wyndham B. Blanton, whose two sons still proudly carry the Blanton name on the rolls of this Academy, once said to me, "Young man, when a patient asks you to prescribe for him, he has paid you the highest compliment one human being can pay another." In like fashion, in electing me to be your president, you have paid me the highest compliment one physician or in a larger sense six hundred and fifty physicians can pay another. I want you to know how deeply I appreciate it. I want you to know how much it has already inspired me to give of my best for what I believe to be the finest medical society in the whole world. I think I can say without fair contradiction that the profession in Richmond has always maintained the highest ethical and moral standards, and I feel confident will continue to do so if we can preserve our role in a free economy unfettered by government encroachment and the pink cast of the welfare state.

The purpose of associated medicine, and I use this term purposefully in place of organized, as I see it, is to preserve the best traditions which have made American medicine the finest in the world, and, at the same time, to be aware of the changes which have come about because of improvement of technological methods and social attitudes and education. In times past the local medical society's chief role was that of a forum for the dissemination of scientific knowledge, the assimilation of the new member by finding out what he knew and what he brought from his recent training to his community. That role is gradually passing, as the hospital staff meeting has become a forum for the

exchange of scientific experiences. The journals have become more widely read and the whole practice of medicine has become more specialized. The dermatologist cannot be expected to be thrilled by a new neuro-surgical approach to headache any more than the orthopedist is entranced by a new drug for the control of a cardiac arrhythmia.

It would, therefore, seem to me that while we should not entirely drop the exchange of scientific material from our meetings, more emphasis should be given to the political, economic, and sociological aspects of medical practice. Since politicians, economists, and sociologists have taken such an interest in our field, I think you will agree with me that it is high time we were taking an interest in theirs. Unfortunately for us, they have taken upon their shoulders the role of interpreting us to the public before we have realized that our image has changed or actually before we thought it necessary for us to have an image at all. In this image-seeking world, I am sorry to say, we must have a good one if we are to keep control of our profession.

Dr. Ernest B. Howard, Assistant Executive Vice-President of the American Medical Association, on October tenth at the State Society's Annual Meeting, stated that 1962 was the crucial year for medicine as proponents of socialized medicine have continued to narrow their attack to the Social Security approach for the medical care of the aged. If the people can be aroused by the facts, this pink-tinged scheme can be shown for what it is—a foot in the door not only for socialized medicine but for the total welfare state. If this trend can be defeated this year, Dr. Howard felt it might be permanently defeated. The United States has the only free medical profession in the entire

Presidential Address delivered before Richmond Academy of Medicine, January 9, 1962.

world and I am sure you will agree with me that we want to keep it that way.

What can we do at the local level to carry on this fight, and let me remind you that we can no longer look the other way; we can no longer let others do it; we can no longer sit on our hands; we must take positive action. Now, how can this be accomplished?

In the first place, our membership should be more completely informed of the real issues involved. Our opponents make us seem to be against home and mother, and the old and the sick. We must turn back this type of chicanery with principles and facts; our program committee deserves your support in marshalling the best talent in the country for this purpose.

We must take a greater interest in the education of the future doctors of Richmond and Virginia. Being most closely associated with one of our two fine medical schools not only geographically but personally as teachers, it is our duty to inquire what attitudes are being fostered, what goals are being set, and most important what kind of people are influencing the minds of our future doctors.

There seems to be little real empathy on the part of the faculty of the Medical College of Virginia with the State of Virginia and her sick. Many of our fine local faculty are regrettably being displaced by medical scientists whose attitudes are either unknown or actually alien to the philosophy and traditions that have been forged for us by such Americans, yes, such Virginians as Washington, Jefferson, Henry and Lee. Greater emphasis is being placed on medical curriculum experimentation than on the fundamentals of medical education, so wisely stated by Dr. W. T. Sanger as the three S's: Science, Skill and Sympathy. Service to the patient is the real goal of medical training and not intellectual satisfaction of the trained mind in its ability to manage disease.

Some of us are beginning to wonder where our medical school stands on socialized medicine, when for instance, at a recent

Student Medical Association meeting to hear a debate between a United Auto Workers' representative and an A.M.A. representative, three of the faculty of professorial rank supported the Social Security approach to medical care of the aged and only one, not of professorial rank, defended the American Medical Association's stand for the Kerr-Mills approach. Although the president of the American Medical Association was here in Richmond at the State Medical Society's meeting, his presence was not publicized among the students, and, as a result, very few, if any, heard him or the Vice-president speak on this timely subject. A senior confided to me shortly after this that he felt a vote of the Senior Class would go for the iniquitous social security approach. Does the medical school ever ask the advice and counsel of the medical associations of our State about their policies? I am afraid they do not. Perhaps it is our fault.

Unfortunately much of the Medical College's support comes from Federal sources. In spite of this fact people like Mr. Abraham Ribicoff have recently stated that the Federal Government has never controlled educational policy of federally subsidized programs. How naive are we! How naive were the Germans as Hitler gradually rose to dictatorial power! We must awaken and see what is happening before it is too late. Dr. Joseph Palmas, in his chairman's address for the Section on Pediatrics at the 110th Annual Meeting of the American Medical Association in New York City, June 27, 1961, made the following statement: "It is worth remembering that Lenin once stated that when the present independent structure of medicine is destroyed, the nationalization of the rest of the people is easy." I would like to commend this address entitled "Medicine is the Life of Service" which was published in the Journal of the American Medical Association, December 9, 1961.

With the approval of the Board of Trustees I have appointed a Special Committee on Medical Education to cooperate with The Medical Society of Virginia's counterpart

committee to await on the administration of the Medical College of Virginia to render them all assistance in presenting associated medicine's part in the current controversy. Three former presidents of the Academy have accepted membership on the important committee, Dr. Thomas W. Murrell, Jr., Councilor for our District in the State Society; Dr. W. Linwood Ball, past first Vice-President of the A.M.A. and currently our Delegate to the A.M.A.; and as Chairman, Dr. Guy Horsley, immediate past President of The Medical Society of Virginia.

Associated medicine also has a role in assessing the balance between research and the training of doctors for the people of Virginia. There are many of us who feel that the emphasis on research is being overdone to the detriment of training young men to look after the sick of our communities. It is our duty to find out if this is true and render our aid in correcting it. Dr. Horsley, past president of The Medical Society of Virginia, expressed similar sentiments in his presidential address recently.

Furthermore, we should also discover why areas of cooperation between our medical school and other health facilities and situations in the State have become progressively narrower and narrower. The extern program, which we feel gives the student not only a means of supplementing income but a practical view of private medicine, is gradually being abolished by the Medical College on the grounds that it is poor exposure of the medical student to substandard practice of medicine because of inadequate supervision. There is room for honest difference of opinion on this.

In the field of nursing Medical College affiliations for nurses from the smaller hospitals of this area are being discouraged so that even here in Richmond our nurses are being forced to affiliate in Charlottesville and Fairfax. This hardly seems fair when nurses are so much in demand and our private

hospitals are really rendering a public service in training them.

Even the Dental School seems less interested in its service functions to other institutions of our city.

We need a much better rapport with our educators. Improved faculty attendance at Academy meetings would help. More interest on our part in their problems would seem desirable.

Another responsibility we have in associated medicine is in informing not only our medical students and our membership but also the public at large. I would envision the Richmond Academy of Medicine's sponsoring one or two public forums each year on such timely topics as Socialized Medicine, Economic Factors in Hospital Care, Community Resources in the Health Field, The Meaning and Scope of Specialties, and so on. We should encourage health fairs or museums, and career days at our local high schools and colleges to interest young people in the medical and para-medical professions. These, to me, are of prime importance and I will look to our able committees on public relations to implement such programs.

I would like to see written a history of the Richmond Academy of Medicine and I know who could do it. We should have a Handbook of Medical and Community Resources to give our membership, particularly the new ones. A more fact-filled orientation program is needed for members. We should take a more active role in the work of the Richmond Area Community Council.

We should have a membership directory with pertinent facts about each member, with special emphasis on recording their interests in the Academy and the community.

Finally, may I again thank you for this honor and tell you how much the Board of Trustees and I need every one of you to help medicine in its hour of greatest peril. I know we can count on your support.

---

1000 West Grace Street  
Richmond, Virginia

# Nonbacterial Endocarditis as a Late Sequel to Severe Malnutrition

## A Study of Four Fatal Cases

ACORS W. THOMPSON, M.D.  
Falls Church, Virginia

*A form of abacterial endocarditis may develop following a period of severe malnutrition. Four cases are reported and factors involved in their etiology are discussed.*

SEVERE MALNUTRITION with its immediate and delayed effects is a frequent problem in countries experiencing the vicissitudes of war. A late sequel not emphasized in American literature is the development of a type of endocarditis characteristically abacterial and unamenable to treatment. Spang and Gabele<sup>1</sup>, who studied the incidence of endocarditis at the Rudolph Krehl Clinic from the years 1917 to 1949, observed a marked increase in abacterial cases subsequent to both wars. This was in distinct contrast to the situation found during normal peace times when the great percentage was bacterial in nature. This increase in abacterial endocarditis was attributed to the stress produced by malnutrition and infections occurring during the war. These authors quoted observations from other countries, Hungary,<sup>2</sup> France,<sup>3</sup> Rumania,<sup>4</sup> Russia,<sup>5</sup> and Spain,<sup>6</sup> where similar increases in abacterial cases subsequent to World War II were observed. In contrast this problem was not reported in the United States.

Although over all nutritional status of the American population was good during World War II, one small group suffered

severe malnutrition; these were the prisoners of the Germans and Japanese. Four cases of individuals who had been prisoners of war and later developed endocarditis resulting in death will be reported. A discussion of the relation of malnutrition to the development of such lesions will be presented.

### Case Report

Case 1: A 32-year-old white male was admitted to the hospital May 7, 1949. He had been well until 12 months prior to admission when he was admitted to a hospital complaining of nausea, headaches, fever, chills, and sweating. Positive findings consisted of pancytopenia, endamoeba histolytica, splenomegaly, and a transient hypoplasia of the bone marrow. The patient was treated with emetine, carbarsone, and diodiquin, and discharged apparently cured. During the fall the patient visited a dispensary complaining of weakness, pallor, malaise, palpitation, dyspnea, and swelling of the ankles. He was treated on an outpatient basis for two weeks and then admitted to a hospital because of the appearance of hematuria and epistaxis. Prior to admission the patient had noted an area of soreness in the right upper forearm. Past history revealed that the patient had been a Japanese prisoner of war and during this period had contracted malaria, amebic dysentery, and beri-beri. His minimum weight had been 75 pounds (normal, 150 pounds). Following liberation the patient made a good recovery with his weight reaching 170 pounds. Otherwise the patient had been well all his life.

Physical examination revealed an alert, pale, thin male in no acute distress. The left chest was slightly more prominent than the right. The point of maximal impulse was

ger breadths below the right costal margin. A mild pitting edema of the lower extremities was present. Fingers and toes were clubbed. In the right upper forearm a tender pulsating mass was present.

Laboratory studies revealed a red blood count of 2.1 million per cubic millimeter, and a white cell count of 3,800 per cubic millimeter with a differential of 83% neutrophils, 11% lymphocytes, 4% monocytes, and 2% eosinophiles. Numerous blood cultures were negative. Repeated urinalysis revealed albuminuria, hematuria, pyuria, and many granular casts. A bone marrow biopsy revealed depression of all elements. Roentgenograms revealed marked generalized cardiac enlargement.

Polyarteritis nodosa and subacute bacterial endocarditis were considered the most likely diagnoses. The patient was treated symptomatically but without improvement. A spiking fever ( $103^{\circ}$ ) was noted on several occasions. Penicillin was administered; a severe reaction ensued which subsided on cessation of therapy. Subsequently the patient became dyspneic and orthopneic. This was associated with nausea and vomiting. Purpuric areas became manifest over both arms. Subungual hemorrhages were also noted. The patient died eight weeks following admission to the hospital.

Postmortem revealed the gross weight of the heart to be 480 gm. The increase in size was due to both dilatation and hypertrophy. A diffuse fibrinous exudate was present over the epicardium. No gross changes were noted in the myocardium. Numerous punctate lesions, linear or verrucous in character, were present on the superior portion of the mitral valve. Several of the small nodules consisted of dense calcific tissue. Across the line of closure extended three small areas of fenestrations which involved the entire thickness of the valve wall. Surrounding these areas was an unusual proliferation of tissue. A small dense hyalin plaque was noted distal to the openings. Many of the chordae tendinae were ruptured in the left ventricle, several having a



Fig. 1. Section of the mitral valve in Case 1, showing calcification and nodular swelling resulting from fibrinoid degeneration of the valvular collagen. (X 6 1/4)

observed at the anterior axillary line. A systolic thrill was palpated at the apex. Blood pressure, 125/88. Lungs negative. The liver was tender and palpable three fin-

hemorrhagic verrucous exudate. Numerous white patches were observed in the endocardium. The coronary vessels were normal. Microscopic examination revealed moderate deposition of fibrin on the epicardial surface. Beneath this there was an extensive infiltration of plasma cells, lymphocytes, and large mononuclear cells involving the more superficial portions of the epicardium and extending into the subepicardial fat.

Some areas of the valvular endocardium contained a moderate degree of fibrinous thickening associated with the presence of numerous clumps of fibroblastic nuclei and heavy collagenous deposition. Other sections revealed focal thickening of the valves by hyalinized material containing basophilic deposits suggestive of calcium. These were associated with ulcerations of the overlying endocardium and with the presence of an occasional clump of coccoid basophilic bodies suggestive of bacteria. The arteries of the myocardium were within limits of normal.

Case 2: A 36-year-old white male was a prisoner of war for three and one half years during which time he suffered from malnutrition, malaria, colitis, tropical ulcers, and beri-beri. After his release he improved and in January, 1949, had a normal physical examination. Past history revealed no symptoms of rheumatic fever. Three months later he was admitted to a hospital with fever, nausea, and leg pains which had been preceded by a cold and sore throat. An aortic diastolic murmur was detected and the patient was given 1,200,000 units of penicillin daily for three weeks. He became afebrile, but thirteen days later suffered a relapse and was treated with 2,400,000 units of penicillin daily for a period of six weeks and discharged afebrile on October 12, 1949. Repeated blood cultures had been negative. For three weeks following discharge the patient felt well. He then began having episodes of chills and fever associated with pain in the right femoral region and with mild breathing difficulty and dizziness. Be-

cause of this he was again admitted to the hospital.

Physical examination revealed the heart to be enlarged to the left. Aortic systolic and diastolic murmurs were heard. A mitral systolic murmur was also audible. Blood pressure 108/66, pulse 104. The liver was palpable five finger breadths below the right costal margin. The spleen was palpable two finger breadths below the left costal margin. Clubbing of the fingers and toes was present. Tenderness was demonstrated in the right femoral region. The dorsalis pedis and posterior tibial arteries were not palpable on the left.

Laboratory studies revealed a red blood count of 4.5 million per cubic millimeter and a white cell count of 9,600 per cubic millimeter with a differential of 59% neutrophiles; 37% lymphocytes, 2% monocytes, and 1% eosinophiles. Urinalysis revealed an occasional granular cast. Serial blood cultures were negative. Subsequent white cell counts were elevated and revealed a shift to the left. A roentgenogram revealed moderate enlargement of the cardiac shadow due primarily to enlargement of the left ventricle.

Large doses of penicillin and anticoagulant therapy were administered for three weeks during which he remained afebrile except on one occasion. He complained of generalized aches and pains and was deeply discouraged. The tenderness in the right femoral region subsided during the first ten days of hospitalization. The liver remained enlarged and tender, but the spleen could not be palpated. On one occasion the patient vomited coffee ground material and in several instances coughed bright red blood. On December 27, 1949, edema of the lower extremities was observed and alleviated with the administration of mercurial diuretics. Jaundice had been present since December 12, 1949, and gradually increased until the time of the patient's death on January 15, 1950.

Postmortem examination revealed the gross weight of the heart to be 460 gm. The

epicardium was smooth, glistening, and transparent. The tricuspid valve was slightly indurated and thickened. The pulmonic valve was normal. On the posterior portion of the anterior cusp of the mitral valve

closing edge to the base had resulted in almost complete disappearance of the cusp. The remaining tags of tissue were thickened. A large papillary verruca measuring 20 mm. at the base, 5 mm. in thickness, and

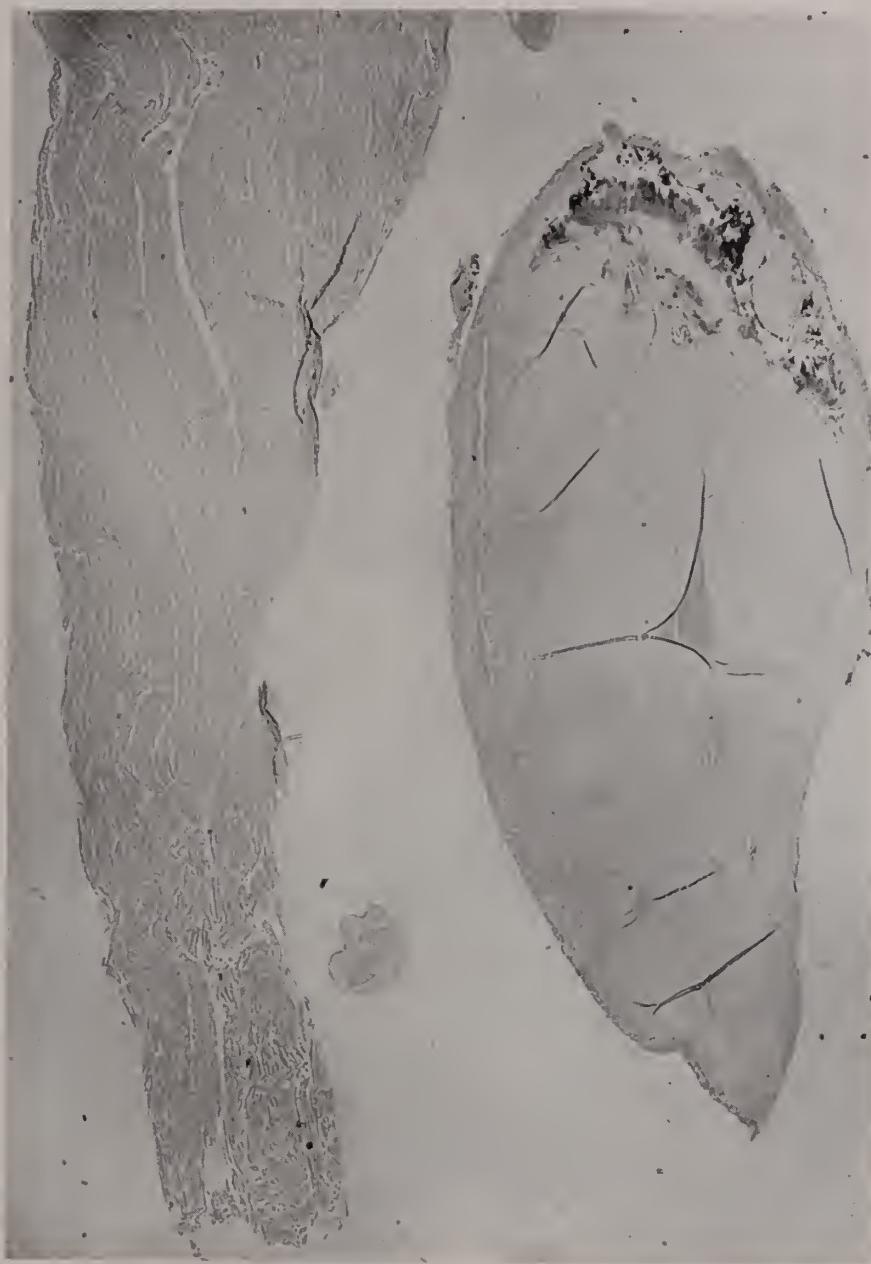


Fig. 2. Higher magnification of mitral valve lesion in Case 1. (X 15)

there was a fibrous papilla imposed upon which were two small calculi of pinhead size. A few atheromatous deposits were present on the anterior cusp. The aortic valve was completely distorted. An erosion of the posterior cusp extending from the

extending 10 mm. into the lumen occupied the anterior cusp on its free and closing edge. It was pale yellowish in color and on palpation was found to be calcified. A similar but smaller raspberry vegetation measuring 2 mm. was located near the commis-

sure. The anterior and posterior cusp were merged by means of a vegetation 10 mm. at the base and projecting 12 mm. into the lumen. An aggregation of linear striae in the endocardium was present beneath the posterior cusps. The coronary vessels were normal. On the anterior wall approximately 2 mm. below the base an irregular scar measuring 8x5 mm. was present. On microscopic examination there was a diffuse interstitial fibrosis of the myocardium. The endocardium was normal except in the region of the septum under the aortic valve where considerable fibrinous material was seen. There was thickening of the mitral

which were deposits of calcium. The base of the vegetation was the collagenous valve.

Case 3: A 29-year-old white male was a Japanese prisoner of war for four years. During this period he suffered from malnutrition, malaria, dysentery, and beri-beri. The patient was discharged from the service in May, 1946, and subsequently went to work. In the fall of 1946 he noted the development of stiffness and aching of the left ankle particularly at night. In January, 1948, he developed swelling of his legs and shortness of breath. During the month prior to his admission repeated episodes of sweat-

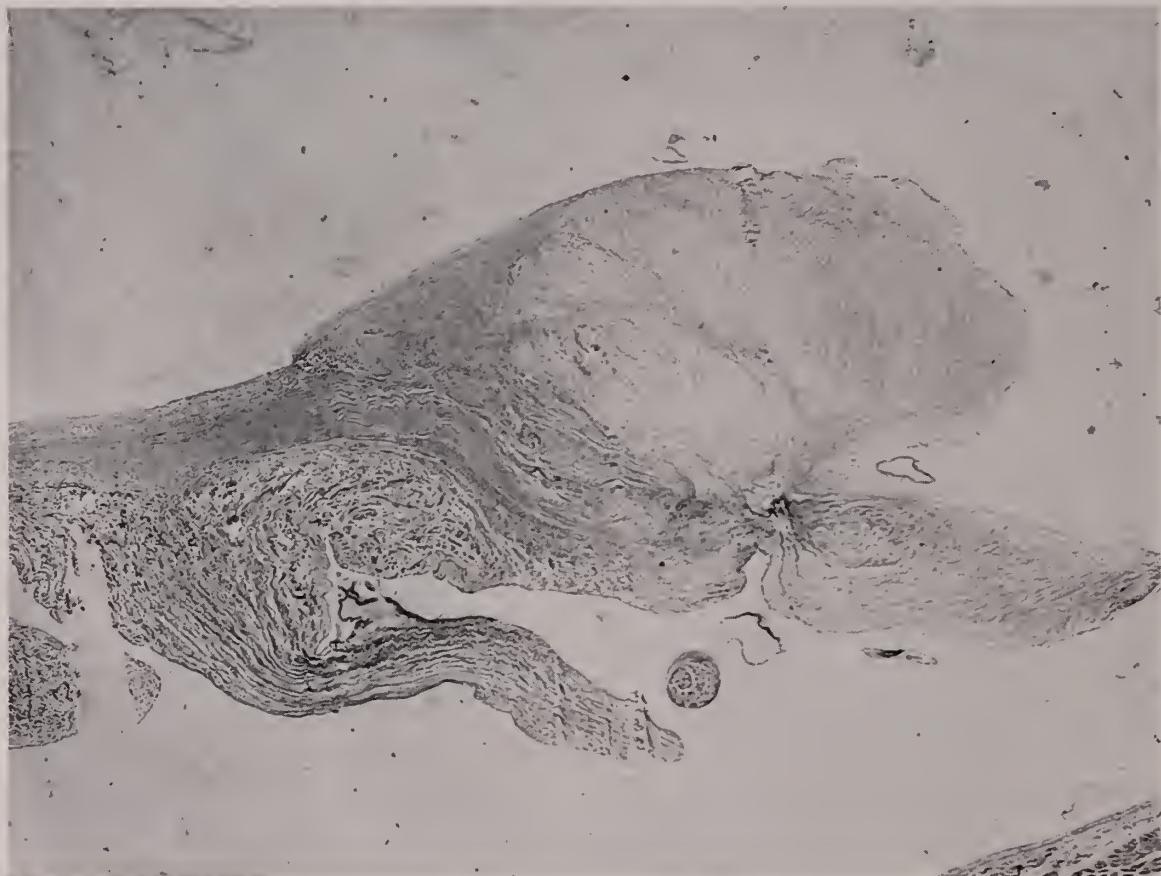


Fig. 3. Microscopical appearance of the mitral valve in Case 3, showing nodular swelling resulting from fibrinoid degeneration of the valvular collagen and the conspicuous absence of blood platelets and inflammatory cells. The endothelial lining remains intact. (X 17)

valve and increased vascularization. A collagen deposit was noted in the central portion. The base of the aortic valve was similar to that of the mitral valve. Vegetations were lined on the outer surface by a layer of thick fibrinous tissue underneath

ing occurred. On July 22, 1948, he was admitted to a hospital complaining of pain and soreness in the lower left side of the chest and pain and stiffness in the shoulders and legs. Past history was negative for rheumatic fever.

Physical examination revealed moist rales in both lung bases. The pulmonary second sound was markedly accentuated. The left border of the heart was at the mid-clavicular line. Systolic and diastolic murmurs were heard in the aortic and mitral areas. Blood pressure, 140/20. There was a marked tachycardia. Examination of the abdomen revealed slight tenderness in the left subcostal area. There was mild clubbing of the fingers of both hands.

Laboratory studies revealed a red blood count of 3.1 million per cubic millimeter and a white cell count of 9,500. A trace of albumen was noted in the urine. A roentgenogram revealed marked cardiac enlargement predominantly left ventricular with evidence of pulmonary congestion and a right pleural effusion. Blood cultures were negative.

After admission the patient was digitalized and started on salicylates. Mercurial diuretics and large doses of vitamins were given. Several days later the patient became nauseated, vomited, and developed a bigeminal rhythm. Digitalis was discontinued. The patient complained of pain in the left and right subcostal regions. He became progressively weaker and more orthopneic. His temperature was slightly elevated at times and bacterial endocarditis was strongly suspected. The patient expired nine days after admission.

Postmortem examination revealed the heart to weigh 590 gms. It was roughly globular in shape. The myocardium revealed no areas of scarring. The aortic and mitral valves were covered with small, yellow, verrucous vegetations. There were no abnormalities of the coronary vessels. Microscopic examination revealed a diffuse interstitial cellulitis of lymphocytes and plasma cells of the myocardium. In some areas the muscle fibers appeared vacuolated and contained large pale vesicular nuclei. A section taken through the mitral valve revealed fibrinoid degeneration of the valvular collagen. The endothelial lining was intact and no inflammatory cells or platelets were present.

Small areas of calcification were also seen. Special stains failed to reveal the presence of bacteria.

Case 4: A 33-year-old white male was a German prisoner of war in 1944 for a period of five months. During this period his weight decreased from 201 pounds to 135 pounds. He had also noted swelling of his lower extremities, diarrhea, and fever. After liberation he recovered rapidly and was discharged from the Army in 1945. In March, 1948, he was readmitted to the hospital stating that he had felt quite well for a few months following his release from the service but then began to note exertional dyspnea and fatigability. During February, 1948, purpuric areas had appeared on his legs and subsequently night sweats and ankle edema developed. Past history for rheumatic fever was negative.

Physical examination revealed a high-pitched diastolic murmur in the aortic area and a split first sound at the apex. A tachycardia was present. Liver and spleen were not palpable. Purpuric spots were present over both lower extremities, and a mild ankle edema was present.

Röntgenograms of the chest revealed cardiac enlargement. Twenty-five blood cultures were negative. Reports of hemograms were not available.

After admission the patient continued to have a tachycardia and a low grade fever. A diagnosis of subacute bacterial endocarditis was made. No improvement occurred despite therapy with 12,000,000 units of penicillin and 2.0 gm. of streptomycin daily. Terminally the patient became very dyspneic. He expired August 22, 1948.

Postmortem examination revealed the weight of the heart to be 500 gm. The epicardium was normal in appearance. No scarring of the myocardium was noted. The tricuspid, pulmonic, and mitral valves were normal in appearance. The aortic valve was bicuspid, the conjoined cusp including the right and posterior cusps. Between the right part of the conjoined cusp and the left cusp

there was a widening of the commissure to 3 mm. A large 10x8x6 mm. vegetation was present on the edge of the posterior cusp near the anterior commissure.

It was grayish yellow and friable with a rough surface and was firmly attached to the cusp. The right half of the conjoined cusp was covered by a flat, grayish yellow vegetation. A perforation was present medial to the vegetation near the midportion of the cusp. The endocardium was thickened below the aortic valve. A friable, grayish red thrombus measuring 1½x1x2½ cm. was firmly adherent to the wall of the left atrium. No abnormalities of the coronary vessels were noted. Microscopic examination revealed a normal epicardium. Several minute areas of fibrosis were observed in the myocardium. The right cusp of the aortic valve was thickened by increased cellular ground substance. A zone of lymphocytic infiltration was present at the base of the valve. Overlying this area was a layer of fibrous material continuous with the valve ground substance. This varied in thickness being most massive over the free edge and greater over the ventricular than the aortic aspect. In and about the valve ring the collagen had the dense clumped appearance of degeneration. In this area also were numerous foci of lymphocytic and plasma cell infiltration each surrounding a plexus of capillaries.

### Discussion

In 1944 Allen and Sirota<sup>7</sup> described a lesion of the heart valves which has been called terminal endocarditis, marantic thrombosis, non-bacterial thrombotic endocarditis, endocarditis simplex, and thrombo-endocarditis cachetica. The abnormality, long treated with clinical indifference, was regarded as a bland thrombus deposited onto an intact or superficially degenerated valve. Characteristically the valvular lesions are hillocks of degenerated, swollen, valvular collagen with occasional admixtures of serum, fibrin, and platelets. These authors concluded that such lesions were not neces-

sarily terminal but could occur during the course of a variety of acute and chronic illnesses and still later heal. It was suggested that allergy, vitamin C deficiency, hemodynamic stress, valvular sclerosis could be concerned in the pathogenesis of this non-specific lesion. It was also considered a medium for ensnaring and propagating bacteria present in the circulation and thus constituted a morphologic basis for the development of bacterial endocarditis.

Ascorbic acid depletion has been emphasized as a cause of collagen degeneration of the cardiac valves by Rinehart and Mettier,<sup>8</sup> who in a study of mesenchymal reactions in ascorbutic pigs subjected to infection noted degenerative and proliferative lesions of the heart valves. Uncomplicated scurvy provided definite atrophic and degenerative changes in the collagenous stroma of the heart valves. With superimposed infection, lesions of a combined degenerative and proliferative nature developed. Performing similar experiments on guinea pigs McBrom et al.<sup>9</sup> concluded that since vitamin C deficiency prevents adequate formation and maintenance of intercellular substance, degenerative lesions may occur in regions of stress and strain, and that a proliferative reaction may take place in an attempt at repair. Lee and Lee<sup>10</sup> studying dysfunctions of the peripheral vascular bed in scurvy noted two prominent features: (1) decreased responsiveness of the contractile elements, notably the arterial portion beyond the pulsatile small arteries, to physiological concentrations of epinephrine, with dilatation of these muscular vessels and consequent slowing of blood flow and (2) dilatation and engorgement of the terminal collecting venules with the tendency towards rupture after trauma. Since it had been suggested that hemorrhage in scurvy could result from the alteration of the endothelial cement or the collagen substance adjacent to the capillaries, Wohlbach and Bessey,<sup>11</sup> undertook studies to determine which of these factors was most important. Their observation recorded that the great preponderance of

hemorrhage occurred in the small venules about which collagen bundles are present, rather than in the true capillary endothelial tubes where collagen is least prominent. This tends to support the idea that a weakening of collagen may be a causative factor rather than any fault in the capillary endothelium or its cement substance.

Hemodynamic stress maintained for an extended period of time may damage a heart valve. The consequence of increased cardiac output is increased stress on valves undergoing periodic compression during closure. Lillehei et al.<sup>12,13</sup> have been able to produce endocardial vegetations in dogs by increasing cardiac output through the production of large arteriovenous fistulas. Vegetations of the valvular and mural endocardium varied from soft friable lesions, similar to those observed in human bacterial endocarditis, to firm vegetations like those of rheumatic endocarditis. A frequent occurrence noted was perforation of the valvular cusps. Similarly hemodynamic stress can be expected in severe states of malnutrition where beri-beri, anemia, and fever are common. An additional factor to be considered is enforced labor. Inadequate dietary thiamine depletes all the tissues of cocarboxylase, the coenzyme concerned in the oxidation of pyruvate to active acetate. Under such circumstances, the pyruvate and other carbohydrate precursors of pyruvate, such as glucose and lactate, cannot proceed to completion. Consequently the concentration of blood pyruvate and lactate rise causing vasodilatation and increased cardiac output. The myocardial response to such a work load is limited however due to the effect of lowered tissue cocarboxylase upon energy production. Chronic lack of oxygen, a condition which may be found in anemia of long standing, usually results in a high cardiac output because of vascular reflexes and other mechanisms protecting the myocardium against anoxia. With fever, vasodilation occurs, thus peripheral resistance is lowered and cardiac output increased.

The four cases presented were prisoners

of war for a prolonged period of time and suffered severe malnutrition. They were discharged apparently well but later, months to years, developed endocarditis characterized by being essentially abacterial and unamenable to therapy.

Are the findings compatible with the diagnosis of endocarditis lenta in the abacterial phase? A discussion of this term is germane to the problem of determining, if possible, the etiology of the cases here presented. Not infrequently the clinical picture of subacute bacterial endocarditis seems to lead to the diagnosis rather than the anatomical features. However Saphir<sup>14</sup> states that it is definitely possible from the gross and histologic appearance to distinguish between acute bacterial endocarditis and endocarditis lenta, describing the latter as characterized by (1) a characteristic clinical picture, (2) characteristic gross and microscopic features, (3) presence of streptococcus viridans Lancefield D strain, and (4) presence of definite evidence of rheumatic endocarditis, preferably Aschoff bodies in the myocardium. Admission is made that there are many transitional forms where no distinction can be made from the data on hand. This obtains particularly when acute bacterial endocarditis is super-imposed on an old valvular lesion. It is stated that the Aschoff body is indisputable evidence of rheumatic heart disease.

Peery<sup>15</sup> in his study of the relationship between brucellosis and heart disease commented that there is no known method of study applicable during life or postmortem that can regularly and positively identify rheumatic fever and separate it from other diseases which it resembles. He feels that it is reasonable to state that the Aschoff body is probably a nonspecific lesion of the connective tissues of the heart produced by any one of many causes and does not define rheumatic fever as a specific disease. He summarizes by suggesting that an open mind be kept on the question and that any reasonable suggestion of a new cause for carditis should be investigated.

Endocarditis lenta obviously is not a well defined disease. The diagnosis is often based on clinical features particularly the factor of duration. Differentiation is made between acute and subacute forms of endocarditis but even this is not always possible. The trend has been to incriminate bacteria or rheumatic endocarditis with superimposed infections as the basic etiologies. The lack of such findings resulted in a reluctance to advance the diagnosis of endocarditis lenta as generally conceived in the cases here presented. The diagnosis could be supported only on the basis of the duration of the disease. The significant facts were (1) a history of severe malnutrition, (2) development of symptoms months to years following improvement in nutrition, (3) negative blood cultures, (4) negative history for rheumatic fever, and (5) predominantly degenerative changes on postmortem examination. It seems only logical therefore to stress malnutrition and hemodynamic abnormalities as being the most probable cause of these lesions. The circumstances were ideal for the production of anemia, vitamin deficiency, fever, and forced physical exertion. The microscopic and gross findings are in several respects similar to those reported by Allen and Sirota<sup>7</sup> as degenerative verrucal endocardosis.

How should the above cases be classified? Probably the answer should take the form of a compromise. Endocarditis lenta is best considered a syndrome of multiple etiology rather than a specific disease. As here presented its concept should be broadened to include such factors as malnutrition and hemodynamic stress.

### Summary

The case histories of four individuals who died as the result of abacterial endocarditis are presented. All were prisoners of war for a prolonged period of time and suffered severe malnutrition. The pertinent foreign literature reporting the increased incidence of a form of post war endocarditis characteristically abacterial and unamenable to

treatment is reviewed. It is postulated that two factors, alteration of mesenchymal tissue during a state of malnutrition and hemodynamic stress, are primarily concerned in the etiology of these lesions. A consideration of the nutritional and other conditions producing alteration of mesenchymal tissue and hemodynamic stress are presented.

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# A Lay Primer of Ophthalmology

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*It is the duty of every physician to provide patients with enough information to enable them to understand not only their disease but also the plan of treatment.*

ONE OF THE GREATEST SERVICES which we may render our patients is to provide a simple, meaningful explanation of the conditions which bring them to us, and of the methods which we employ to help them. The vast numbers of patients who tolerate glasses testify to the general concern and preoccupation with visual problems. This great interest is too frequently associated with meagre, or erroneous, information, for which we must share the responsibility.

There are patients who think that ophthalmologists are not interested in examining their eyes for glasses, while others think that optometrists have equivalent, or even superior, background, training and experience. Their ideas about the function of glasses may be a mixture of Old Wives' Tales and of Bridge Table Fables.

We must face the fact that sometimes even the simplest explanation is wasted. Nevertheless, there are several groups who can be expected to benefit from a brief, systematic exposition of the basic principles of eye care. These categories would comprise such responsible and strategically important elements as teachers, school administrators, welfare workers, safety directors

in industry, and, of course, our medical colleagues. It is to such as these that this paper is directed. For their convenience the discussion will be divided into three parts, with no pretense of completeness or finality.

## I. Notes on the Form Development and Function of the Visual Apparatus

The most obvious anatomical features of the eye are the transparent central outer portion or cornea, and the colored iris membrane, with its mobile pupil, which lies posteriorly. The prominence of the eye makes it unusually susceptible to disease and injury, and the results are likely to be more serious than elsewhere in the body. The superficial cornea is the first line of defense, and is, therefore, richly protected by nerves of pain.

In the absence of blood vessels in the cornea, another types of circulation has been developed. The clear, watery fluid, or "aqueous", of the anterior eye is produced mainly by the ciliary body lying behind the iris. This fluid passes forward through the pupil and then out of the eye at the outer "angle", where the cornea and iris meet. Disturbances of the circulation can give rise to higher, or lower, intraocular pressures. If the pressure is abnormally high, the condition is called glaucoma. This is found more often as we get older, and is likely to cause blindness unless brought under control.

The experience of seeing depends only in part on the act of focusing a sharp image on the nerve elements which line the inner eyeball posteriorly. It is true that the physical conditions of the eye must permit the formation of a satisfactory image, and the receptor cells must be intact and packed together in a pattern of sufficient density in order to provide what we call normal cen-

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tral vision. But all this is not enough. From our observation and experience we must conclude that this faculty of central vision, on which almost all of us depend to earn our living, requires a very special type of stimulation of the brain during an early plastic stage in its development. It is essential that this stimulation be present during the first three or four years of life. If it is delayed until the sixth or seventh year, it becomes virtually impossible to develop satisfactory visual acuity. We must assume that normal central vision involves a high order of cerebration and effective associations established in early life are necessary to produce a perceptive pattern which corresponds to the physically perfect image.

Binocular single vision is also a faculty which most of us take for granted. Although the images received by the two eyes are separate and demonstrably different, we perceive them as identical and single. This fusion of the two images has some definite optical advantages, and also serves to eliminate what could be a disturbing rivalry for our attention.

We are not born with binocular vision. In the first months of life, the jerky, erratic deviation of the visual axes is easy to recognize. The infant is learning to synchronize the twelve muscles, six attached to each eye, which make our complicated ocular movements possible. He is also learning to project his retinal images into space, to turn his head and eyes so light rays from the object of his attention fall on the specialized macular area, and to alter the focus of the eyes so that the images received by the retina are sharply defined.

Under normal conditions of health and development the child progresses steadily and may achieve recognizable, presumptive binocular vision at about the age of six months. An unusual tendency to deviation at this time would suggest pathology of one or both eyes and should be brought immediately to the attention of the ophthalmologist.

A frequent cause of the deviation known as squint, or crossed eyes, in children is the result of what is ordinarily a most useful neurological labor saving mechanism. Satisfactory near vision demands that certain external muscles turn the eyes to the midline, while internal muscles adopt the shape and position of the lens for the appropriate focus. These are the processes of convergence and accommodation. The nerve centers which control these two functions lie near each other. They are stimulated together, and their responses tend to be efficient and identical. If, however, the child has a high degree of far-sightedness, which demands an excessive stimulation of accommodation for near vision, the combined response might cause the visual axes to converge proximally to the object of the child's gaze. He would direct one eye at this object, naturally, and the other would be "crossed". This situation would not only interfere with the development of binocular single vision, but, more importantly, with the development of acute central vision in the squinting eye. The urgent need of treatment cannot possibly be over-emphasized.

It is important to the ophthalmologist that one cerebral hemisphere tends to develop dominance over the other as typified in right- or left-handedness. Commonly one hand and the corresponding eye take charge of specialized and unilateral activities. There is evidence that this tendency to right or left cerebral dominance is an inherited trait, but its manifestation is often thwarted. It is frequently easy to persuade a naturally left-handed child to prefer the right hand, or to become ambidextrous, while the left eye may retain its dominance. The resulting confusion may have several important effects. Often there is difficulty in learning to read, perhaps aggravated by the methods of teaching which are presently popular.

The efficient use of the eyes requires that rays of light be collected from the largest possible area or field of vision. The focusing of these widely scattered rays to form an adequate image on the retina, or nerve layer,

will depend on such factors as the size of the eye, the curvature of its several surfaces, and the densities of the various media through which the light must pass. The light rays are especially affected by the crystalline lens which is located just beyond the pupillary opening of the iris diaphragm. We may change the focus of our eyes from far to near by changes in the shape (and position) of the lens. The lens substance assumes a shape, more or less spherical, under the influence of its elastic capsule and of the ciliary muscle to which it is attached by a zone of fibrils.

The lens is of epithelial origin. Like the related tissues of the hair and nails, it continues to grow as long as we live. We can cut off our nails, but we can't dispose of our lens cells so easily. If the lens got larger, it might destroy the eye. Therefore the cells must pack together more tightly, and the lens grows denser and less plastic.

These changes are gradual and relatively uniform throughout life. A baby may focus an object in the vicinity of its nose, but our near point of clear vision gradually moves off. This means that all the difficulties associated with accommodation, or near vision, are increasingly evident as we get older. There are no important exceptions. Somewhere between 40 and 45 years of age, those who have good vision at a distance will find that they are benefited by additional help for near, which could be provided by "bifocals".

Such a condition, called presbyopia, is not the result of disease or senile degeneration, but of an orderly, inevitable process of growth. Sometimes it is associated with a marked increase in the "strength" of the lens. Then the patient may become near-sighted so gradually that he does not observe the failure of his distant vision, and he is likely to boast of his "second sight". If the lens were truly diseased or sufficiently traumatized, it would become opaque, or cataractous, and surgical removal of the "cataract" would be necessary before good vision could be restored.

Whether an eye is near or far-sighted will depend largely on its size and shape. The larger the eye the more likely it is that it will be near-sighted, since the rays of light from a distant source may come to a focus in front of the retina. Distant objects will appear blurred unless seen through a divergent lens or unless the peripheral rays are partially excluded by a narrowing, or "squinting", of the lids.

A child's eyes participate in the body's general expansion and growth. The only possible change in the size of a healthy eye is for it to get larger. Often the scleral or supporting coat of the eye seems to be unusually elastic in a near-sighted child. There is presumptive evidence that his eyes may be made larger and his myopia worse by squeezing the lids together in order to improve his distant vision. Therefore it is important to recognize and correct his near-sightedness early. Too often, the parents ignore his symptoms and complaints and even the warnings of his teachers.

The far-sighted patient must make an active effort of accommodation in order to focus even the most distant object. His eyes are never at rest if they are required to see clearly without glasses. His difficulties will depend on the degree of "far sight", the nature of the task and his age, and will range from an intangible inconvenience to a manifest impossibility.

Astigmatism results when the effective curvature of an eye is greater in one meridian than in another. Usually the strongest and weakest meridians are 90 degrees apart, but the situation may be much more complex. Astigmatism is a common defect of our optical system. The name implies that a point source of light cannot be perceived as such. It will be seen as something varying between a linear streak and a blurred circle, but never as a point, unless the sight is corrected by glasses.

Anisometropia is a less familiar term but is an important condition. It means that the refractive power of each eye is different. One eye could be near-sighted and the other

far-sighted. It is a contingency for which our nervous system does not provide. The eyes cannot accommodate independently. In anisometropia they are unable to focus properly together unless glasses provide them with a "crutch".

Another anatomic disability, which may be found in essentially normal eyes, is known as aniseikonia. The image of an object as perceived by the retina of one eye may vary in its size from the image perceived by the other. The result may be a more or less uncomfortable confusion of the clues by which we determine relationships in space.

It is necessary for us to keep in mind that even simple lenses before the eyes can change the dimensions of the images, and, therefore, the apparent, size, shape and direction of the object. We must often warn our patients of the effect, but, fortunately, any inconvenience is usually temporary.

Even when the patient has normal binocular vision, there may be problems associated with the coordination of the twelve external muscles which move the eyes. One or more muscles, or the corresponding innervation, may be at fault. The impaired function may arise from anatomical variations, or it may be due to injuries at birth and later, or to inflammatory reactions. It may also accompany the generalized deterioration of advancing age.

There is a final concept of the function of the eyes which I believe is most important and fundamental. Our eyes operate under a dual system of controls, of which one is *voluntary*, and the other *automatic*. Something similar is found elsewhere in the body, especially in respiration, but the case of the eyes is unique. As soon as our higher (frontal) cerebral areas decide what we will look at, we have little or nothing to say about what our eyes do. The automatic controls, operating from their base in the occipital cortex, direct the movements of the eyes so as to orient the visual axes and regulate and maintain the depth of focus by a set of reflexes analogous to those built into an "electronic brain".

The efficiency of these reflexes and the integrity of their response depend on the quality of the images which the two retinae receive. If obstacles to the formation of adequate images exist, the automatic mechanism will falter (slip a cog), throwing the load back on the voluntary system. This necessitates repeated efforts of attention to get back on the "beam", which can add up to extreme fatigue.

Our subjective appraisal of these visual images is of little, if any, importance. In general, we judge our visual performance by what we see with the better eye, but the difficulty which we experience will depend on the poorer eye. Obviously, therefore, "twenty twenty" vision in each eye, even unaided, does not guarantee that we are able to use our eyes efficiently.

The symptoms which result from obstacles to our automatic innervation will vary with the strength of the voluntary stimulus. We may have no trouble at all while reading an absorbing mystery, but much of our activity is unavoidably humdrum, and we need all the help we can muster to maintain an acceptable level of performance.

It is necessary to recognize this variability of the voluntary stimulus in order to understand how glasses may serve a useful purpose and yet not be essential at all times, even for close work. An analogous situation is that in which we may be on our feet without complaint for a considerable time, yet, in the end, we welcome the comfort of a chair.

Children who have major visual obstacles for near work are not apt to develop a serious interest in books, and thus their complaints are relatively rare. An older person, on the other hand, with long established motivations, who has reached the limit of his accommodative power, may suffer intensely from psychic and physical "strain" associated with his far-sight, astigmatism, presbyopia, or other impediments, unless such conditions are corrected.

## II. Methods of Examination

The original and universal method of examination is simple inspection. Almost everyone, at some time, has attempted to examine the eyes in this way, and teachers, as well as general medical and auxiliary personnel, have an unusual opportunity and responsibility to do so.

Most parents are ordinarily capable of making the diagnosis of a cross-eyed child, and it is especially sad that these patients are so seldom seen by an ophthalmologist during their early, plastic years. We should look on a childhood squint as an emergency. The patient should be directed to an ophthalmologist, and to no one else, at once, regardless of his age.

After children enter school, we depend largely upon the teacher to determine the need for examination by an ophthalmologist. I say ophthalmologist, because no one else is fully competent to deal with the visual problems of young children. It is true that an ophthalmologist may not always be available, and there are many opportunities for the conservative optometrist, who recognizes the limitations of his medium, to perform a valuable service.

The teacher will be able to employ a variety of screen tests, but none will be more important than her intuitive judgment. She should learn to recognize the confusion, embarrassment and loss of interest in a child too naive to explain that he cannot see the blackboard. Dr. G. E. Arrington<sup>1</sup> has made an outstanding study of the problems associated with the screening of school children.

In respect to the technics which we employ in eye examinations, the greatest interest, confusion and concern relates to the use of "drops". There are a great variety of such medications which may have nothing in common except the obvious effect of widening the pupil. Some "drops" may also block the muscle which permits the lens to change its focus. This interference may handicap far-sighted patients, especially in their close work, and may cause important, though temporary, annoyance. No one is

"blinded" by drops, although the wide pupil may admit an excessive amount of light, which can be dazzling and uncomfortable, especially if not relieved by dark glasses.

The duration of action of "drops" may be as long as several days, or as short as a few minutes. It will depend on the type of medication used, which will be determined by the age of the patient and by the condition which is to be studied or treated.

Cycloplegic drops are not only helpful in examination but are one of our most valuable forms of medication. Only ophthalmologists are trained to use "drops", and only physicians are permitted by law to do so.

To the question, "why do you use drops?", we answer that we use them in the many cases in which they provide the only feasible method, and in the many other cases in which they provide a definitely superior method, of examination.

There are three common and important advantages in the use of "drops". First the dilated pupil makes it easier to examine the interior of the eye, which often affords vital, invaluable information.

Second, the wide pupil provides a sharper focus of the test object on the retina. This phenomenon is familiar to anyone who is experienced in photography. This sharper retinal image helps many patients select the most suitable lenses to correct their vision.

The third advantage of the drops is that they can be used to put the focusing, or accommodative, mechanism at rest. We are looking for a base-line in our examination. We wish to discover the focus of the eye when it is as near the resting state as possible. To try to determine this basic focus (plus any irregularity of refraction) while the accommodation is active, especially in young children and sometimes in adults, can be as impossible as trying to read a printed page which someone else moves rapidly back and forth in front of us.

Perhaps the most serious disadvantage of cycloplegic drops is that we may find it advisable for the patient to return at a later

date in order to test his lenses under more normal conditions of use. This consideration may influence our choice of techniques. In general we may say that it is rarely necessary to use drops in order to obtain a result which will satisfy the patient, but it is often necessary to use them so that we may feel the satisfaction of having rendered the fullest service possible.

When we attempt to examine the eyes of a patient for glasses, we are performing a complex biological experiment with an untrained assistant. Our accuracy can be of a high order, but it is variable. It is never as great as that of a purely physical measurement. A complicating factor can be the referral to the eyes of symptoms produced by disturbances in other areas and organs. A broad foundation in medicine is needed for their interpretation.

The presence of the parents may be an almost unsurmountable obstacle to the examination of the very young. The very old are not only subject to optical imperfections, but sometimes to mental deterioration and confusion.

Many patients are so highly suggestible that great tact is needed to minimize this tendency. Others are so sensitive to the idea of criticism or censure, that they will choose to perform negatively rather than appear to fail. The mere suspicion of failure may generate hostility.

A relatively minor emotional block may render the patient incapable of making consistent observations until the situation can be relieved. Fortunately, our procedure is essentially so simple that a patient who responds in a confident, straightforward manner can hardly make an important mistake. Also we can be thankful that, as Dr. W. B. Lancaster emphasized, there are often a number of satisfactory solutions to the patient's problems, instead of the single one which is popularly imagined.

### III. Aims of Treatment

The most obvious goal is to enable the

patient to "see better". This implies that he will appreciate the improvement, although the benefit may be extremely variable.

In this category are a wide range of conditions. It would include the squinting infant who is threatened with amblyopia of one eye from lack of use, the near-sighted child who cannot see the blackboard, and the older patient with inevitable presbyopia. We should also list those patients with cataracts and scarred corneas, retinal detachment and the like, who require surgery in addition to the glasses with which this paper is chiefly concerned.

A second category of treatment concerns the preservation of the visual function. Periodic examinations are not indicated merely to determine whether we need new glasses. They are the best insurance against the ravages of insidious disease, such as diabetes, hypertension, uveitis and, above all, glaucoma.

When external violence has occurred, extreme gentleness is mandatory. The eye has little protection against the hand. Passive blinking may sometimes get rid of a foreign body, but rubbing will never do so. Prompt splashing or, better, immersion of the eye in water will limit the extent of chemical burns, and may save the sight.

Great progress has resulted from the recognition by industry that the use of protective eyeglasses paid off in dollars and cents. However we are only beginning to appreciate the protective value of glasses in every day life. Children, especially, are liable to injuries which involve the eyes. Every year all of us see children who suffer accidental loss of vision which almost invariably could have been prevented by the simple wearing of glasses.

From this experience, there are certain minimal recommendations which we can make. Everyone who has had the partial or total loss of vision of one eye should wear glasses, and the lens before the good eye should be tempered to resist shattering. Near-sighted patients, especially children, generally should have tempered lenses, since

their glasses are quite thin at the center and fragile. Above all we should endeavor to impress patients and parents with the importance of this protective function. No one needs to feel sorry for himself, or for anyone else, because he wears glasses.

A third area of treatment touches the field of psychotherapy. We have the emotional needs of the patient in mind when we seek to prevent or correct crossed eyes, or to repair injuries and deformities of the lids and associated structures.

Many times, children and adults, alike, present symptoms referable to their eyes, when their true difficulty is emotional. These patients deserve a meticulous examination, but our treatment must be conservative, lest we confirm their neuroses.

It is unfortunate that many people are resentful and unhappy over wearing glasses, instead of being grateful for the unique blessings which they confer. Some will submit to the handicap of going without glasses, while others will prefer to wear irritating, inconvenient, expensive and unsanitary contact lenses.

Contact lenses have an established, legitimate place in treatment, but they provide an inadequate solution to problems of personality. Our real concern ought to be with the mistaken, collective attitude which makes these typically immature patients so unhappy. We should not tolerate it, but should seek in every way possible to create a more substantial and positive appreciation of the function of glasses. In doing so, we will go far towards helping our patients develop the self-confidence and morale which are so necessary for happiness.

Finally, I wish to name a fourth and major objective of treatment which is to increase

our visual efficiency. The eyes are not merely sources of delight; for most of us, they are the tools with which we earn our living. It is to our interest to employ them as dexterously as possible.

Many unfortunate people have crippling visual disabilities which are functional and unnecessary, even gratuitous. Much of this unhappiness could be avoided if children with important refractive errors were encouraged to learn to wear glasses at an early age. Such experience would enable them to develop a facility and skill which is sometimes impossible to acquire in later life.

The use of the eyes should be as simple and unlabored as normal breathing. Of course breathing may sometimes require an iron lung, and, likewise, we may encounter difficulties in seeing. The important fact is that help is available for many patients who may be unaware of its existence or emotionally unable to recognize its value.

There are patients who will wear glasses religiously, even if the benefit is slight, if they are sufficiently impressed by their doctor's authority. There are many more who go without, because they do not understand what glasses do. Failure to appreciate glasses may be the result of troubled emotions, ignorance and prejudice, but the potential benefits are none the less real.

I believe that we should not expect, or be satisfied with, blind obedience from our patients. We should provide them with as much useful information and practical knowledge as possible. It is our obligation, no less than our privilege, to do so.

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# Radiographic Aspects of Esophageal Moniliasis

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*Esophageal moniliasis has a characteristic appearance on x-ray. Since rapid recovery follows appropriate treatment, an early diagnosis is desirable.*

WITH the constantly lengthening life span of patients with chronic debilitating diseases and the ever increasing use of steroids and antibiotics, infections with *Candida albicans* as the etiologic agent assume an increased importance. This fungus is a normal inhabitant of the gastro-intestinal tract and when the resistance of the host is decreased or there is alteration of the normal floral balance, clinically active infection may occur.

Oral thrush is not necessarily a precursor to esophageal involvement but the two may coexist. Classically the disease is seen in debilitated chronically ill patients receiving steroids or a prolonged course of antibiotics. They complain of the rather acute onset of dysphagia which is progressive to the point that any oral intake may be difficult. The anti-fungal antibiotic nystatin is specific in treatment and the patients usually experience gratifying symptomatic relief of their dysphagia in 48-72 hours.

*Editor's Note:* This article was written while Dr. Williams was Resident in Radiology at the University of Virginia Hospital.

## Review of the Literature

Andren and Theander<sup>1</sup> first reported the roentgenographic appearance of esophageal moniliasis in 1956. Kaufman<sup>2</sup> and Wagner and Kessel<sup>3</sup> have described the roentgen appearance in infants and children. Marsh<sup>4</sup> and Kaufman<sup>5</sup> have described the radiographic appearance and diagnostic criteria in adults.

## Roentgen Diagnosis

Diagnosis is made by barium swallow. There is destruction of the mucosa and a ragged serrated appearing esophageal outline. There is usually some degree of spasticity present and long segments are involved. In early cases the esophagus is distensible but with increasing chronicity the esophagus tends to become rigid. Following therapy the reversion to normal is prompt.

The radiologic differential diagnosis involves other forms of esophagitis and esophageal varices. Involvement of extremely long segments and dysphagia are uncommon with varices, and in some cases of moniliasis the lower esophageal segment is spared. Other forms of esophagitis can be differentiated by roentgen examination of the esophago-gastric junction and by the clinical history.

Culture of the fungus from the esophagus is of course diagnostic as is the objective and subjective response to nystatin.

## Case Presentations

Case 1: This 53-year-old colored female was admitted to the University of Virginia Hospital in August 1960 with acute monocytic leukemia. She had been taking 7.5 mgm. of prednisone daily for at least a

month prior to admission. She complained of severe dysphagia and esophageal washings yielded *C. albicans*. Barium swallow on August 12, 1960, (Fig. 1) revealed the

proven by biopsy. She was subsequently treated with radiation therapy but in October 1960 was started on prednisone 5 mgm. q.i.d. because of dissemination of her disease.

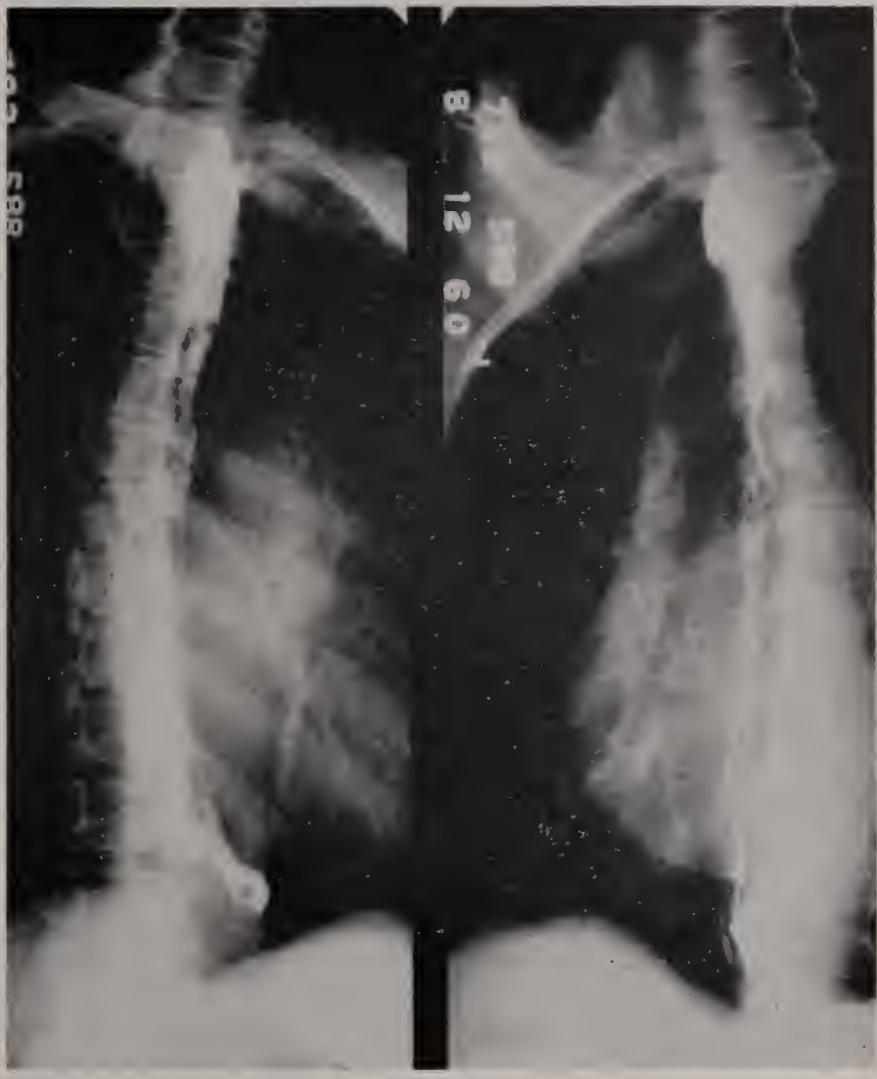


Fig. 1.

characteristic findings of monilial esophagitis. A course of Mycostatin oral suspension gave prompt relief of dysphagia and a repeat barium swallow on August 26, 1960, (Fig. 2) showed a normal esophagus.

**Case 2:** This 59-year-old white female was admitted to the University of Virginia Hospital for the first time in May 1960 with a retroperitoneal reticulum cell sarcoma

Because of severe progressive dysphagia a barium swallow was done on November 26, 1960. (Fig. 3) The roentgen findings were typical of monilial esophagitis and her clinical response to Mycostatin oral suspension was excellent. She was not re-examined because of her otherwise deteriorating clinical status. Autopsy examination several months later revealed no esophageal disease. Al-

though no culture from the esophagus was obtained, we feel that this case is typical of esophageal moniliasis.

characteristic and there is specific curative therapy available.

(3) Although monilial esophagitis is com-



Fig. 2

### Summary and Conclusions

(1) A brief review of the clinical and radiographic picture of esophageal moniliasis has been presented with two illustrative cases.

(2) This entity is important because the radiographic findings are diagnostically

paratively uncommon at present, an increase in its incidence may be expected with the increasing use of steroids and antibiotics in chronic debilitating diseases. We must all be increasingly aware of this entity as its effects may be catastrophic in these already precarious patients.



Fig. 3

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# Hemorrhage into an Orbital Cyst

## A Case Report

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*A case of lymphangioma of the orbit is presented.*

THE CASE which we present is that of a 12-year-old white female who was admitted to the University of Virginia Ophthalmology service on 1/3/61 with a two-week history of right exophthalmos which had appeared overnight and was associated with right orbital pain, intermittent diplopia, and a bluish discoloration of the right eye lid. The exophthalmos had subsided to some degree during the two weeks prior to admission.

Visual acuity on admission was 20/120, O. D. and 20/30-1 without glasses. The right eye revealed moderate proptosis, slight periorbital edema, a mild superficial injection, and a bluish discoloration of the inner portion of the lower lid (Fig. 1). On pal-



Fig. 1.

Presented before the Virginia Society of Ophthalmology and Otolaryngology, May 1961, Roanoke.

pation there was a cystic mass between the globe and the medial and inferior orbital rim. It was difficult to displace the globe in any direction. Ductions were markedly limited in all direction of gaze. Abduction of the left eye was limited and the patient was unable to look to the left without turning her head to the left. Pupils and media were normal. The right fundus revealed early papilledema, absent venous pulsations, and retinal folds which were disposed in a radial fashion about the macula. The left fundus was normal. No bruit was heard over the eyes or about the skull. The remainder of the physical examination and laboratory studies including urinalysis, routine hemogram, serology, intravenous pyelograms, and x-rays of the skull, right orbit, chest, and long bones were within normal limits.

On January 9, 1961, the right orbit was explored through an incision in the right lower lid fold, and a multilocular cystic tumor was found to occupy the medial inferior portion of the orbit and to extend far back toward the apex. There was no well defined capsule and the cyst was thin-walled. Consequently it was not possible to remove the tumor without perforating the wall on several occasions. Most of the tumor was filled with dark blood; however, a few compartments contained a straw-colored fluid. The entire lesion could not be removed without risking damage to the other orbital contents, and an undetermined amount of the cyst was left in the posterior portion of the orbit. Pathological examination of the specimen revealed a lymphangioma with hemorrhage. The post-operative course was

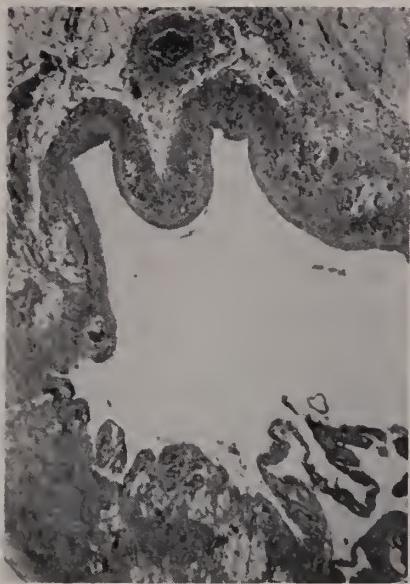


Fig. 2.

uneventful and the patient was discharged on 1/12/61 to be followed in the Out-Patient Department. Fig. 3 was taken at the



Fig. 3.



Fig. 4.

time of discharge. Fig. 4 shows the patient three months postoperatively at which time her vision was 20/40 and 20/30 corrected to 20/20, O. U. with glasses. There was no evident exophthalmos and the right fundus appeared normal. The ocular rotations were normal except for a left hyperphoria which was greatest (measuring 2½ P. D.) in conjugate gaze down and to the left.

Dr. Reese in his book, *Tumors of The Eye*, list five lymphangiomas out of a total of 251 primary extraocular orbital neoplasms which were recorded consecutively at the Presbyterian Hospital in New York. Dr. Ira S. Jones has recently reported the largest series of lymphangiomas of the ocular adnexa in which there were 29 cases of lymphangiomas in the orbit. His analysis of 62 cases appears in the March 1961 issue of the American Journal of Ophthalmology.

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### Miracle Drugs . . . Household Words

Over the past 20 or 30 years medical contributions to the health and welfare of our people through careful research have been magnificent. That this is true is clearly evidenced by the fact that miracle drugs, lifesaving vaccines and new types of equipment have become household words even for the man on the street.—Charles S. Rhyne, former president, American Bar Association.

# The Diagnosis and Treatment of Facial Fractures

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*As automobile accidents increase, more facial fractures are being seen. Methods used in diagnosing and treating these injuries are discussed.*

ALL PHYSICIANS are being faced with the mounting problem of diagnosis and treatment of increasing numbers of automobile accident victims. Accidents and injuries are rising steadily. Even though the National Safety Council has shown that the mortality rate of automobile accidents

We usually see a person who has been thrown forward against the steering wheel, dashboard and windshield, sustaining a compound facial injury involving soft tissue and underlying bony structures. Many times even those wearing belts will receive severe facial fractures. It is therefore extremely important to all physicians who are called upon to treat these badly injured people to anticipate facial fractures and to understand some of the methods of diagnosis and treatment of this specific injury.

When these patients are first seen the usual general evaluation of all injuries should not be neglected. Bleeding should be controlled, tracheotomy performed if needed, shock controlled, other injuries of head, chest, abdomen, cervical spine and extremi-



Fig. 1. Nasal Fracture—This patient shows the typical deviated nasal fracture received from a fist blow. After manipulation the usual contour is restored.

can be improved approximately sixty percent if the occupants of the car use seatbelts, little has been said about the increasing morbidity of the injuries of survivors.

Presented at the Annual Meeting of The Medical Society of Virginia, Virginia Beach, October 9-12, 1960.

ties evaluated and the usual tetanus and antibiotic therapy given as necessary. Foreign bodies and loose teeth should be removed from the mouth.

One should always expect and look for a facial fracture when there is any laceration, contusion, or history of any facial

injury. All lacerations should be probed and the surrounding associated bony structures examined carefully for fractures. The symmetrical contour of the face is frequently the most important guidepost of diagnosis.

*Nasal fractures* are usually obvious because of edema and an external deformity. It is important to obtain a history of previous injury. You may be rather embarrassed while attempting to treat a deformed nose to learn that the patient received a nasal fracture many years ago. Crepitus of the fractured bones is often present. The septum should also be examined. Fractures will

be compounded into the nose with tears of the nasal mucosa and nasal bleeding.

*Mandibular fractures* are also easily discovered by motion and tenderness at the fracture site. Most mandible fractures are double with an anterior break on one side and a posterior ascending ramus fracture on the opposite side. Loose teeth may be often noted in the fracture site. The mouth should be carefully examined for tears in the alveolar mucosa near the fracture. Condylar neck fractures should be suspected in the patient who has difficulty in opening his mouth.

*Maxillary fractures* are commonly asso-



Fig. 5. Mandible fracture—This young woman received a compound fracture in an automobile accident. After plastic reconstruction of the lacerations and six weeks mandible immobilization a satisfactory result is obtained. The second photograph shows the mandible immobilized with interdental traction utilizing arch bars.



Fig. 4. Maxillary fracture—This child received a severe laceration and compression injury to the right cheek and underlying maxilla. With satisfactory reconstruction a good functional and cosmetic result is obtained.

ciated with crush injuries of the face. Frequently one can demonstrate this fracture by any motion in the front teeth on manipulation. By tapping the teeth with a coin or similar available object, a dull sound may denote a crack in the maxilla adjacent to the tooth. Palatal lacerations are also good indications of a fractured maxilla. Proper dental occlusion can be determined by inspection or by asking the simple question, "Do your teeth fit together properly?" Palpation of both cheeks and antral regions will demonstrate what we call "the squashed egg" sign with obvious deformity easily found.

Many maxillary injuries will have asso-

pressing upon the optic nerve. Diminished or absent vision is a dangerous clue. We have been asked to see patients several days after a severe accident who have irreparable damage to their optic nerve because of neglected fractures. Their physicians had become so involved with the other severe injuries that little attention had been given to optic nerve damage. It is very difficult to restore lost vision.

*Zygomatic fractures* are probably one of the most frequent facial fractures. The isolated zygomatic fracture is usually the result of a direct blow upon the cheek bone area and presents an obvious depression deformity. Spot tenderness coupled with this



Fig. 2. Zygoma Fracture—The depression of this man's right cheek is the result of a direct blow. After elevation through a temporal incision the normal position of the cheek is restored.

ciated orbital fractures. Fortunately if it involves only one side, one can compare both orbits by palpation. Diplopia, severe periorbital ecchymoses, and edema are other clues of orbital injury. Subconjunctival hemorrhage may be the only sign of an isolated orbital fracture. Most common is the trimalleolar fracture which usually involves the lateral orbital rim at its junction with the zygoma. Severe maxillary fractures may involve the anterior orbit and extend posteriorly along the orbital floor. It is very important to determine the complete extent of such an injury because of the possibility of bony fragments in the posterior orbit

depression is easily noted with comparison to the other normal side.

X-rays are an important diagnostic aid in the evaluation of facial fractures. It is necessary to obtain good quality views and frequently they must be repeated to confirm a clinically suspected fracture. X-rays are usually of little help with the diagnosis of a nasal fracture; however, a dental film lateral view will frequently outline the bony fragments. Mandible fractures are usually determined by anterior, posterior, and right and left lateral views. The Towne View for a condylar neck fracture is extremely helpful. Occasionally one must obtain laminino-

grams to accurately evaluate the extent of condylar neck or temporo mandibular joint injury.

Maxillary fractures are difficult to demonstrate satisfactorily with x-ray because of the thin membranous bone. These "egg shell" fractures are best determined by clinical examination; however, mento-vertex stereos and Water's views also obtained in stereo can delineate many fractures. These same views are useful in evaluating orbital fractures. Views of the optic foraminae attempt to demonstrate any distortion of the orbital floor. Zygomatic fractures are well demonstrated by both the Towne view

of facial structures, it is much simpler and easier to obtain a good result with early repair. The tissues of the face have a natural immunity to infection from the normal flora of the naso-pharynx and oral cavities, but one should proceed with primary repair as soon as possible. The one exception to any postponement of the treatment of a facial fracture is that fracture which involves the maxilla and affords compression of the optic nerve. This fracture should be decompressed immediately. Occasionally the nerve will have been lacerated by the bony fragments and only partial vision can be salvaged. The morbidity is extremely high



Fig. 3. Compound Facial Injury—This patient exhibits a rather severe injury in which the zygoma, maxilla, floor of the orbit, nose, upper alveolar arch, and mandible were all fractured. The importance of preserving all of the vital portions of the facial bone structure is stressed with this satisfactory postoperative result showing normal facial contour with good maxillary and mandible function.

and Water's view. Of course with standard evaluation of any facial injury, AP and lateral skull x-rays should be obtained to aid in ruling out any associated skull injury.

*Careful reconstruction with the goal of perfect anatomical realignment is the basis for good facial fracture repair.* Treatment of facial fractures, with the exception of one instance, can usually be deferred five to ten days until the more serious injuries have been corrected. However, we consider repair within the first eight to 24 hours as quite important. Because of infection and increasing edema with associated distortion

with this injury if treatment is not prompt.

Those of you who will treat facial fractures should certainly remember one very important point. Many, many patients have been severely deformed by too extensive and enthusiastic debridement of fragments of facial bone. Although these fragments may be completely detached from their surrounding tissues, they will, if placed in good anatomical position, survive. It is very difficult to reconstruct the entire forehead and lateral orbital wall of an individual when this bone has been discarded. The face is one portion of the body in which debride-

ment should be performed very carefully and only totally damaged tissues removed.

Nasal fractures are quite often successfully treated by simple digital manipulation and splinting. You can frequently hear the fragments "pop" into place. If there are multiple fragments, moulding them into a normal position may be necessary. Depressed fragments have to be elevated with an Ashe forceps or a simple Kelly clamp over which a protective pad has been placed. Frequently the fracture will extend into the septum which will have been buckled or occasionally slipped out of its groove. This can be realigned with the position of the septum and overlying structures maintained by insertion of small vaseline gauze packs. An external nasal splint either of metal or adhesive or similar material usually provides adequate fixation. If marked depression or comminution of the nasal bones is present, through and through wire fixation anchored on lead plates is necessary. In the severely depressed nasal fracture which is usually coupled with a depression of the midface an outrigger or a plaster headcap with elastic traction to the nasal bones maintaining them in outward normal position may be needed. The fractured nose is usually stable within two to three weeks. No matter how diligent your initial treatment may be, many of these fractures are difficult to keep in perfect alignment and need osteoplastic rhinoplasty reconstruction in the future. It is very important to mention this initially to the patient so that they will understand if such a need arises. In children with simple nasal fractures which are satisfactorily realigned, you must also caution the family that occasionally in the future the septum will grow abnormally and develop distortion which leads to airway obstruction. A submucous resection after the child has gained maximum growth usually corrects this abnormality. Long term follow-up is important.

With the uncomplicated mandible fracture, treatment is usually simple in patients having their full complement of normal

teeth. Usually interdental wiring with Erich archbars or Ivy loops gives complete and satisfactory stabilization which when maintained for an average period of six weeks is adequate. Edentulous individuals present more difficult problems. Their dentures may serve as a very satisfactory splint. Circumferential wiring of the denture around the mandible and fixation against the maxilla with a wire attached through the nasal spine around the mandible will in most cases provide good immobilization. External fixation which in the past has been quite fashionable in the treatment of facial fractures is rapidly being replaced by open reduction and internal fixation. Great care must be exercised to avoid any damage to the marginal branch of the facial nerve. Occasionally external fixation with metal splints will be needed for an anatomically reduced condylar neck fracture. With children there is still an important place for the headcap with chin sling for the uncomplicated mandible fracture.

Maxillary fractures if severe usually require the combination of archbars to align the upper teeth which are then fixed to the posterior aspect of the zygoma with circumzygomatic wiring. If the mandible is not involved in the fracture, interdental wiring is used with the mandible serving as a splint for the fractured maxilla. Open reduction and elevation of the fragments of the antrum is usually necessary. The antrum is packed through a buccal sulcus incision, after the fragments have been placed in proper alignment. Occasionally with a very severely depressed fracture a headcap with external fixation and elastic traction to elevate the middle face is necessary. In most automobile accidents the force of the impact is delivered upward and backward so that the maxilla is raised anteriorly and is not depressed as much as one might expect.

Orbital fractures are very difficult to repair unless open reduction and wiring of the fragments are performed. Elevation of the orbital floor through the antrum is all that is necessary if the inferior orbital rim

is intact. However, one should be extremely careful when relying on this method only, because after the pack is removed, you will find the entire area has sagged resulting in a very obvious deformity. Orbital floor reconstruction with a bone graft or tantalum mesh may be indicated. The eye will be down and the patient will have diplopia. As we have stressed and wish to stress again open reduction and decompression of fragments of the orbital floor which are impinging upon the optic nerve are a very important and an extremely necessary measure. Orbital rim and trimalleolar fractures if not treated vigorously with open reduction and stainless steel wiring are very prone to give unsatisfactory functional and cosmetic results.

Zygomatic fractures are usually extremely easy to elevate through a temporal incision. With the Gille's approach the temporal muscle is incised and an elevator is passed along the temporal fascia. Carefully using the skull as a fulcrum, the fracture is elevated into position. As in nasal fractures frequently one can hear a "pop" as the

fragments impact. Usually the anterior and middle thirds of this bone are involved.

In summary a few "general truths" may be stated about this problem. Fractures of the face are becoming much more frequent because of the increased number of automobile accidents. They are frequently missed in patients with multiple injuries and one should always remember the saying of "you don't find them unless you look for them". Many times a lifesaving tracheotomy is indicated with severe compound facial injuries. All other injuries should be treated first in evaluating patients with a facial fracture, but one should be absolutely sure that no evidence of optic nerve damage by comminuted orbital floor fragments is present. More open anatomical reductions with internal fixation are being performed for this problem. In spite of excellent treatment frequently secondary plastic surgical reconstruction of the residual deformity may be necessary.

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### The Cloak of Socialism

Most people forget that *they* are government and that the *people must pay in taxes* for every appropriation government makes. The issues are fast being drawn. One of them is, will government dominate research or will private initiative be left a significant role? Another is, will prices of health products and many other products be regulated by competitive forces as they have been in the past or by government? A third is, will medicine remain a free profession or will it be forced to put on the cloak of socialism under gradual Federal encroachment? . . . As we pass into any program which is socialistic, we sacrifice the total well being, independence and dignity of the individual to the average well being of the masses, where people are leveled into mediocrity, with little independence and much sacrifice of dignity by the individual, just as has been done in Russia.—*Profits Insure Progress:* Francis Brown, President, Schering Corporation.

# Carcinoma of the Lung with Metastasis to the Brain

## Report of a Case Simulating Pick's Disease

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***This case report illustrates the unusual course and symptomatology that may be associated with carcinoma of the lung.***

THE PATIENT, a 64-year-old woman, was admitted to the sanatorium on October 9, 1955. She had had considerable examinations in other hospitals and by other physicians prior to admission to Westbrook. The patient herself had no complaints but she had been observed to have shown personality change and failing memory since early 1954, at least. Neurological examination in December, 1954, was entirely normal, but x-ray of the left lung showed an "oval density 4 x 3 cms. near the periphery of the left first interspace. It was well-defined and apparently of long standing with no excavation." The impression was that degenerative cerebral disease was the most likely cause of symptoms. The nature of the pulmonary disease was undetermined at the time (December, 1954) and surgical intervention was decided against.

At examination in March, 1955, the patient's indifference, perseveration, and memory difficulty had increased. Pneumoencephalogram revealed moderately diffuse cerebral atrophy with some dilatation of the ventricular system. Electroencephalogram was compatible with the diagnosis of cortical atrophy with evidence of greater

involvement on the left than on the right. Psychiatric and neurological consultations were carried out. No localizing neurological signs were found. Ophthalmologic examination revealed no significant ocular pathology and visual fields were full.

The patient remained at home for several months between March and October, 1955, but her activities had to be restricted and this resulted in some irritability. She no longer could be allowed to drive a car after she side-swiped three or four cars one day. She claimed that happened when a package fell off the front seat and she reached down to get it. Someone got her license number and the police went to her home and talked with her husband. She and her husband went on a cruise to Europe in the summer of 1955 and he noted that her reactions then were far from normal.

On admission to Westbrook, it was expected that custodial care was all that could be provided for the patient. The diagnosis of a pre-senile organic brain condition such as Pick's or Alzheimer's disease seemed assured. The lesion in the apex of the left lung was known to be present, but several x-rays had revealed no change in it.

A psychological test given on October 30, 1955, supported the diagnosis of Chronic Brain Syndrome.

The patient expired on May 2, 1958. For several weeks prior to death she had gradually become weaker, there was some vomiting (which was recognized as probably of cerebral origin) and there was moderate fever. The downhill course continued despite treatment with antibiotics and intravenous

feedings and it was expected the illness was terminal.

The patient's mental condition gradually deteriorated during hospitalization. She was at all times quite indifferent to her surroundings but usually pleasant and friendly in manner, although frequently restless and wandering about the building at night. Visits from family and friends seemed to mean little to her. She progressively became more untidy in her habits.

An autopsy was performed which revealed carcinoma of left upper lobe of lung with metastasis to lungs, anterior and posterior mediastinal lymph nodes, adrenals, thyroid, and cerebellum. There was compression of the fourth ventricle by metastatic tumor, and internal hydrocephalus. Section through the cortex showed no appreciable loss of neurons, and no evidence of vascular disease in the brain. The brain stem showed no change other than pressure effect in the region of the fourth ventricle. Sections of the cerebellum showed the presence of adenocarcinoma identical to that seen in the lung and elsewhere, with abundant mucin production.

Examination of the lungs at autopsy revealed the tracheo-bronchial tree to be filled with purulent mucus. Both lungs were studded with 1-2 m.m. firm gray nodules, found throughout all lobes. In the upper left lobe there was a 6 c.m. gray mucinous mass surrounding the superior segment bronchus. There was extensive involvement of lymph nodes in the chest cavity. There was extensive involvement of the adrenal medullar by metastatic carcinoma.

The liver, pituitary, heart, aorta, skin, pancreas, and spleen were not remarkable.

Within the cranial cavity, the dura was adherent to the skull, the vessels showed no appreciable atheromatous deposit, the me-

ninges were clear, and the cerebellum was extensively replaced by a gray mucinous tumor which was adherent to the dura.

The brain in the fixed state weighed 1450 grams. The left meninges were somewhat cloudy. There was no appreciable widening of the sulci nor narrowing of the gyri. The central portion of the cerebellum was quite soft and tumor protruded on the surface. The vessels at the base of the brain were delicate and showed very minimal atherosclerosis. No thrombi were demonstrated. Multiple parallel sections were made through the brain. The lateral ventricles were considerably dilated, as was the third. No focal lesions were seen in the cerebral hemispheres. The aqueduct of Sylvius was dilated. The central portion of the cerebellum was replaced by a 5 c.m. mucinous tumor lying in the midline, and compressing the fourth ventricle which was not dilated distil to the point of compression.

It would seem probable that this patient's organic brain pathology and mental symptoms were due entirely to the metastatic tumor in the cerebellum which resulted in internal hydrocephalus. The patient had given evidence of organic brain disease for at least four years prior to death. It is improbable that any definitive treatment could have been offered this patient even if the correct diagnosis had been established.

The case is considered interesting because there were no localizing neurologic signs despite extensive involvement of the cerebellum, and the patient's mental condition seemed so typical of a pre-senile organic disease such as Pick's. The increased incidence of lung cancer may be expected to result in other cases with intra-cranial metastasis and organic brain symptomatology.

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# Combination Chemotherapy in Chronic Lymphocytic Leukemia

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*A review of the literature on the results with combined chemotherapy in the treatment of this disease is presented.*

**C**OMBINATION CHEMOTHERAPY with two or more cytostatic agents being used simultaneously or consecutively is one of the newer approaches to the management of malignant diseases.<sup>5,8,21</sup> This method of attack has been extensively explored in the treatment of acute leukemia.<sup>17,18</sup> In the present study a search has been made of the literature to determine what clinical reports have been published within the last decade on the employment of combination chemotherapy in cases of chronic lymphocytic leukemia.

**N-Mustards plus Corticosteroids.** Aboul-Nasr<sup>1</sup> tested several combinations of nitrogen mustards and adrenal steroids in the control of chronic lymphocytic leukemia. He reported a mild remission of five months in a patient administered methyl-bis-(beta-chlorethyl) amine ( $\text{HN}_2$ ) plus cortisone, and a good remission for 22 months in another patient receiving methyl-bis-(beta-chlorethyl) amine-N-oxide (nitramin) plus cortisone; in a third patient he induced a good response for 44 months with  $\text{HN}_2$  plus nitramin plus cortisone; two more patients showed moderate improvement on the combination  $\text{HN}_2$  plus cortisone plus ACTH, and another had a good remission for 17 months with the combination  $\text{HN}_2$  plus cortisone plus ACTH plus nitramin; and

finally, nitramin plus ultracortisone caused two good responses for 35 and eight months. Alper and Zimmerman<sup>2</sup> employed the combination  $\text{HN}_2$  plus cortisone to secure a fair response in one patient. Popescu, and associates,<sup>15</sup> described a hematologic remission in a patient, following the use of chloramino-phane (CB1348) plus prednisone. Braunersteiner, et al.,<sup>6</sup> noted little palliation in a patient administered  $\text{HN}_2$  plus cortisone, and Bergna<sup>4</sup> observed satisfactory remissions, following the use of the combination CB1348 plus prednisone.

**N-Mustard plus Corticosteroids plus TEM.** Aboul-Nasr<sup>1</sup> gave a combination of nitramin plus cortisone plus triethylene melamine (TEM) to induce a good remission for 16 months in a patient with chronic lymphoid leukemia.

**N-Mustard plus Urethan.** Kolar<sup>11</sup> employed  $\text{HN}_2$  plus urethan plus irradiation in 57 patients with chronic lymphocytic leukemia and chronic myelocytic leukemia to induce some palliation. Cappello<sup>7</sup> treated seven cases of the same two types of chronic leukemia with the combination  $\text{HN}_2$  plus urethan plus irradiation, and he described some favorable response.

**N-Mustard plus TEM plus Irradiation.** Silverberg and Lee<sup>19</sup> described long survivals in patients with chronic lymphatic leukemia who had a combination of CB1348 plus TEM plus irradiation administered: 20 of 30 patients were alive at the time of reporting, one with a survival of seven years, and 10 were dead who had had an average survival of three years.

**N-Mustard plus Vitamins.** Szentklaray<sup>20</sup> noted 12 good subjective and objective remissions in 12 patients administered the

combination 1,6-bis-beta-chlorethylamine-1,6-deoxy-D-mannite-dichlorohydrate (degranol) plus vitamins.

*N-Mustard plus Antibiotics.* Vakar, et al.,<sup>22</sup> used the combination 2-chlorethylmethylamine (embichin) plus penicillin plus transfusions in 12 cases of chronic lymphocytic leukemia to secure partial hematologic and bone marrow remissions.

*Urethan plus Corticosteroids.* Rosenthal<sup>16</sup> administered a combination of urethan plus the modified corticosteroid, triamcinolone, to induce three fair responses in five patients.

*Urethan plus Thiouracil.* Olmer, et al.,<sup>14</sup> found the treatment with urethan plus thiouracil was more efficacious in patients with chronic myelocytic leukemia than in those with chronic lymphocytic.

*Urethan plus Antibiotics-plus FeSO<sub>4</sub>.* Walter, et al.,<sup>23</sup> recorded a patient who was free of symptoms of chronic lymphoid leukemia for 8½ years who received combination chemotherapy with urethan plus penicillin, plus FeSO<sub>4</sub> plus transfusions plus irradiation.

*TEM plus Cortisone.* Olansky, et al.,<sup>13</sup> maintained a patient three years on the combination TEM plus cortisone.

*TEM plus Myleran.* Marmont and Fusco<sup>12</sup> noted that eight patients with chronic lymphocytic leukemia responded slower but equally well as five patients with chronic myelocytic leukemia on the combination TEM plus myleran.

*TEM plus Thio-TEPA plus Ultracortisone.* Aboul-Nasr<sup>1</sup> described a good remission lasting 26 months in a patient administered TEM plus Thio-TEPA (triethylene thiophosphoramide) plus ultracortisone.

*8-Azaguanine plus 6-MP plus Steroids.* Bousser, et al.,<sup>24</sup> reported that the combination 8-azaguanine plus 6-mercaptopurine (6-MP) plus steroids was without effect on two patients with chronic lymphocytic leukemia.

*Cortisone plus Penicillin.* Bousser and Jallut<sup>25</sup> recorded a fair response in a patient, following treatment with cortisone plus penicillin.

*ACTH plus Cortisone.* Prolonged remissions were secured in two of four patients with chronic lymphocytic leukemia who received the combination ACTH plus cortisone plus irradiation plus transfusions.<sup>10</sup>

*Tri-iodothyronin plus Chlorpromazin plus Hormones.* Bacigalupo<sup>3</sup> secured some response in one patient with chronic lymphocytic leukemia, following treatment with the combination 3,3,5-tri-iodothyronin plus chlorpromazin plus hormones plus irradiation.

## Conclusions

Combination chemotherapy of chronic lymphocytic leukemia reviewed in this study fails to match the marked improvements noted in acute leukemia.<sup>17,18</sup>

Combinations with nitrogen mustards have been employed most frequently, and several of these deserve further clinical testing.

There is little evidence of enhanced toxicity in combination chemotherapy of chronic lymphocytic leukemia.

*Acknowledgments.* The original literature for this study has been made available by the National Library of Medicine, and the libraries of Furman University and Greenville General Hospital.

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MONTHLY REPORT OF BUREAU OF COMMUNICABLE  
DISEASE CONTROL

		Jan.-	Jan.-	
	Apr.	Apr.	Apr.	
	1962	1961	1962	1962
Brucellosis -----	3	0	4	5
Diphtheria -----	1	0	5	4
Hepatitis (Infectious) ---	92	157	591	451
Measles -----	1425	2296	6240	6192
Meningococcal Infections ..	4	5	26	22
Aseptic Meningitis -----	1	2	6	5
Poliomyelitis -----	1	0	2	0
Rabies (In Animals) ----	12	37	56	118
Rocky Mt. Spotted Fever--	1	1	3	3
Streptococcal Infections --	675	848	3632	2991
Tularemia -----	1	1	5	4
Typhoid Fever -----	1	1	5	1

WILLIAM R. NELSON, M.D.

## A New Plastic Laryngectomy Tube

Since the first laryngectomy by Billroth<sup>1</sup> in 1873, surgeons carrying out this procedure in the treatment of cancer of the larynx and the laryngopharyngeal areas have utilized metal tubes in the permanent tracheal openings to prevent stenosis of these stomata and to maintain adequate patency at the skin margin in instances of more than normal collapsibility of the distal tracheal wall. The laryngectomy tube can often be abandoned after complete healing when the diameter of the tracheal orifice is quite adequate, but some laryngectomized patients have a feeling of greater safety when a tube is worn during sleeping or physical exercise. The time-honored, elongated metal tube with removable inner cannula used by laryngectomized patients for more than half a century has varied but little in design since the early days of laryngectomy. Its shape is similar to that of the temporary tracheostomy tube which must of necessity extend for a greater length through skin and soft tissue into the tracheal lumen. Plastic copies of these tubes have been fashioned and are thought by some to have advantages over the metal variety. In laryngectomized individuals irritation of the tracheal mucosa is quite often seen, especially at the inner tip of the tube where a ridge often accompanied by ulceration occasionally develops. It is quite apparent that permanent tracheal stomata after laryngectomy do not require the elongated variety of tube which has so long been in fashion. Toward this end Moore<sup>2</sup> first utilized a "plastic button" to maintain tracheal patency. Such a button can be easily slipped out by the patient for cleaning and maintains itself in position by an inner flange even when there is vigorous coughing. No inner cannula is necessary

since the patient can easily clean the inner surface during frequent removal.

Morfit<sup>3</sup> conceived the idea of developing such a plastic tube in various sizes to fit average stomata, thus obviating the necessity of tailoring buttons for each individual tracheal opening as suggested by Moore. Utilizing Morfit's method of manufacture, such "plastic buttons" have been fashioned from solid teflon in recent months at the Medical College of Virginia for use in suitable laryngectomized individuals. With the aid of an expert machinist solid bar teflon is carved into tubes of varied diameters on a lathe. Inner and outer flanges are produced to hold the tube in position and only occasionally is it necessary to fashion a tube longer than 2.5 cm. (Fig. 1)



Fig. 1. Sample teflon laryngectomy tube.

At this writing a total of twelve patients, laryngectomized on the General Surgical Service at the Medical College of Virginia, are now using these buttons and all have found them satisfactory. (Fig. 2) In sev-



Fig. 2. Teflon tube in tracheal opening after bilateral neck dissection and laryngectomy.

eral instances the older metal tubes have been

replaced with short plastic appliances and serious irritative phenomena have thus been remedied. Each patient has been impressed with the ease of stomal care, the absence of mucosal irritation, the light weight of the new "button", the lack of a need for tapes to hold the tube in position and the improved appearance brought about by the use of these "buttons" of revolutionary design.

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### Common Symptom of Depression

The single most common symptom of depression is fatigue, according to an article in the April 14th Journal of the American Medical Association. A large number of persons seek medical aid for bodily complaints, often severe, which may or may not be related to a disease, and many of these persons with so-called functional disease are suffering symptoms of depression, according to Drs. John D. Stoeckle and Gerald E. Davidson, Boston.

From patients seen at the Medical Clinic of the Massachusetts General Hospital over a four-year period, they found that this depressive reaction followed a wide variety of events which came as a psychic shock to the patient and produced a feeling of personal loss.

The three main types of shock which precipitated the depression among the group observed were bodily injury, loss of a sense of security, and separation from a loved person.

"The single most common symptom of disturbance in bodily feelings was a loss of the feeling of well-being. The patient com-

plained of fatigue, tiredness, or 'heavy' feelings. The fatigue was often overwhelming and made daily activity very difficult. The usual obligations to oneself and to family, friends, or job could not be fulfilled. The spectrum of this depressive fatigue varied from a general feeling of being 'tired all the time' to inability to work or get out of bed in the morning."

Disturbances in sleep patterns and eating habits as well as a feeling of helplessness, hopelessness, irritability and resentment were other common symptoms. Generally, the patients felt a distressing loss of self-esteem and withdrew their interest in people, objects, and activities.

"It is often difficult to realize that many losses are irrevocable, that substitution is often impossible, and that illness will continue until the patient is able to accept these facts. The course of depression may be chronic, like that of many other medical diseases, and its modification likewise difficult. However, many reactions to acute losses are self-limited and, if not, can often be alleviated."

# Mental Health . . .

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## **Learning and Behavior Problems of Children**

Learning disorders comprise a high percentage of children seen in child guidance clinics. Children who are achieving good grades or are working to the limit of capacity are presented much less frequently. The parents of a child with a learning disorder may stress his behavioral problems or his academic lag. The two nearly always accompany each other. These combined areas of problem are usually severe enough to cause serious reservations as to the child's ability to earn and cope in adulthood in a fashion commensurate with his ability. These reservations should be held until a program of remedial teaching and improved child-parent relationship is effective.

The above observations, repeatedly made, seem to indicate the following conclusions.

1. School performance is a convenient and fairly sensitive index of the mental hygiene of school children.

2. School and child guidance clinic personnel had best become as vigilant and sophisticated as possible in the diagnosis and remediation of learning disorders.

3. If remediation is not feasible in the schools and the child guidance clinics, then these professionals should become better able and more willing to seek out remedial teachers and clinics and to supervise and coordinate the efforts of the parents and child in the remedial services.

This paper will review and attempt to define the most common and serious learning disorder. Hopefully, what can be done about it by parents, schools, child guidance

clinics, and physicians may flow from its contents.

## **Reading Disorder**

Of all the learning disorders that may occur, that of reading is by far the most serious and ramifying. Our culture leaves less and less of a place for its illiterate members who are increasingly denied both status and monetary return. The child must read functionally to proceed in any curriculum, including many vocational schools.

All children at the outset of school are expected by their parents to learn and progress satisfactorily in reading. Implicit with this is the expectation that the child will proceed through elementary school, high school and on to college. Although most parents will deny such *a priori* attitudes, attendance at college is rapidly becoming a national myth. Also implicit with this myth of achievement is that each child will grow up and eventually transcend the position and station of his parents. The fact that around 15-20% of children entering school will not achieve adequate facility in reading is not a well popularized fact. It is well known certainly to educators, psychologists, child psychiatrists, juvenile court workers, foster care workers, and many other persons whose primary or ancillary interests lie in the area of child welfare and its attendant behavior problems. Reading defect therefore is a common disorder that befalls about 1/6 to 1/5 of children.

A definition of reading defect must always be a relative one. The most typical one is that of a nine-year old boy (boys more often than girls in a ratio of about 10 to 1) in the fourth grade who is reading at a level two years behind his grade. Of course, the

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younger the child the less the reading lag must be in order to constitute a serious obstacle in maintaining acceptable progression. For example, a child completing the first grade with a four or five month reading lag will be as severely crippled as a fourth grader with a two year lag. Fabian<sup>1</sup> suggested a 25% defect in reading being sufficient to preclude satisfactory school progression.

Another aspect of the usual definition is that the child be of average intelligence or above. This leads to the consideration of the part that mental deficiency plays in incidence. Although results in the demographic studies of mental deficiency vary, the usual agreement is somewhere between three and four per cent of the population at any given age. This does not include the severely retarded or so-called "uneducable" child who is usually never allowed to embark upon the normal school curriculum. When these rather predictable cases of reading defect are subtracted from the overall incidence this leaves between 11 and 16 per cent of children with normal or above normal intellect who are failing to read at a functional level.

There are those who propose that reading disorder, like mental deficiency, is distributed in the population along a bell-shaped curve. This leads to the belief that in normal distribution a reading defect will result in a predictable percentage of the population. If this proposal be carried to its conclusion, however, it would only indicate that between one and two per cent of school children, with mental defectives excluded, would show a reading disorder. The fact, as already mentioned, that incidence of reading defect is far above this predicted figure would seem to mitigate against this proposal. By analogy, the same situation prevails in predictions of mental deficiency where the incidence in fact exceeds the predicted rate of normal distribution by two to four per cent according to whatever study one uses as reference. The disparity between predictable and actual incidence points to specific organic and experience factors in the production of

both mental deficiency and reading disorder. So much for our analogy—let us return to the "normal" child with reading disorder.

### The Clinical Picture

The child who cannot read well enough may be presented by his parents with a variety of complaints, none of which may have to do with poor reading. Some may emphasize chronic negativistic attitudes and behavior. Some may single out poor attentiveness and lack of tenacity in all kinds of behavior. Some children may be impulsive and aggressive, some may be passive, weak, and non-coping in many areas with seemingly low thresholds to all kinds of strong stimuli. Some of them may have habit disorders, some may have frank neurotic symptoms, such as phobias and obsessions, although in my experience reading defect is not a strong correlate of these two types of behavior disorders. In school he may be said to have any of the above behavioral symptoms and also is usually described as having poor attention, hyper-activity, signs of high tension level, showing excessive day-dreaming and provocative, distracting behavior. Once the reading defect has been established by standardized tests such as the Gray Oral Reading and Gates Primary Reading Tests he will frequently exhibit the tendency to confuse and reverse letters similar in appearance, such as *d* and *b*, *p* and *q*.

He will have the tendency to perceive and write small words in reverse, such as *saw* and *was*, *dog* and *god*, *rat* and *tar*. In reading tests he will substitute his own words for those he cannot recognize. He may perceive a word correctly one minute and then be unable to recognize it the next. He tends to write vertically instead of horizontally. Some children show the phenomenon of mirror reading and writing.

These findings have added significance when one realizes that probably all children exhibit them during the late preschool period. As such they probably represent normal maturational patterning. Most children relinquish or outgrow them by first

grade. If they are retained beyond the seventh birthday they probably represent maturational deficits that are more likely to appear in boys. Whether these deficits are primarily psychological or physiological in nature is not completely settled but the evidence favors a physiological explanation. Arithmetic does not typically show retardation and the child may be even precocious in it.

The history and examination of children with reading defect will usually reveal poor child-parent relationships, chronic negativistic attitudes of child to parents and other authority figures. A variety of behavioral and emotional problems may be present.

Some children with reading defect do not show the above signs of symbol reversal and vertical writing. Disturbed family relationships and behavioral problems of the child are almost always found however. Their reading problem is perhaps entirely emotional in nature. School and learning may be just another area which they are fearful of or unwilling to try.

It has become glib usage to speak of the rather high incidence of left-handedness and mixed dominance in reading defects. The total of incidence varies from study to study; some writers place great emphasis on this phenomenon, others minimize or deny its significance. The following percentages of handedness or mixed dominance are said to exist in the total population: about 50% are consistently right dominant, including hand, eye, and foot; another 45% represent mixtures of dominance of hand, eye, and foot, such as right hand, left eye, right foot, or left hand, right eye, right foot, etc. Consistent left dominance of hand, eye and foot occurs in about 5%.

The higher incidence of mixed dominance and left dominance has been reported in several other categories of children, including juvenile delinquents, child guidance patients in general, and foster children. Gates, in 1936, reported a 10% increase of mixed dominance in reading defect over the normal population. My own experience in

crossed dominance in reading disorders tends to emphasize the left dominance situation in the incidence of about 20%. Complete right dominance occurred in about 34%, and as such is less than in the normal population. Mixed dominance occurred in 44%, which approximates the normal distribution.

The establishment of dominance and handedness probably is an expression of both habit training and propensity for neuronal patterning. It would seem that mixed or left dominance might not so much be the cause of the reading defect but rather an accompaniment or coincidental finding, indicating an underlying mild cerebral dysfunction or vicissitudes in habit training or both.

Other aspects of the clinical picture include a greater incidence coming from low socio-economic backgrounds, a high incidence of delinquency in both the patient and the family. Foster children show greater incidence of reading defect, particularly if there have been frequent changes in foster home during infancy and the pre-school years. In contrast to the above deprived backgrounds, there is a greater incidence coming from higher educated families who place high valence upon academic achievement. This is particularly true if parental techniques have included chronic, hyper-demanding patterns.

### Differential Diagnosis

Mental retardation and deficiency must be excluded. This is preferably done by individual testing utilizing standard instruments such as the Stanford-Binet and Wechsler Intelligence Scale for Children and Adolescents. Group tests should not be used for definitive diagnosis, since the child who cannot read cannot do well on a test which requires him to read the instructions in order to solve the problems. Frank brain damage can be found by the clinical neurological examination, although the incidence of cerebral palsy does not automatically produce reading defect.

Gross visual and auditory defects must be ruled out, but only the most severe defects in these sensoria are crucial factors. The child does not learn to read with his eyes but with his brain. If poor vision and hearing is not accompanied by cerebral dysfunction or poor motivation, the child will probably learn to read.

As indicated repeatedly above, the psychiatric findings in the child with a reading defect almost always indicate moderate to severe emotional problems. The key issue is whether the psychologic disturbance is secondary to the reading difficulty, or concomitant with it, or the cause of it.

### Etiology

Investigative studies in this area have tended to flow in three main areas. These include the genetic-organic, the school centered, and the child and family centered. Each emphasis has its champions, often unfortunately to the exclusion of other possibilities. I think that by now we are forced to entertain the fact that reading defects may represent a multiplicity of factors and that all must be detected and evaluated before reasonable goals and programs of remediation be singled out.

### The Genetic-Organic Approach

Orton,<sup>2</sup> in 1937, proposed the theory of delayed or incomplete establishment of cerebral dominance. He placed great emphasis on the seemingly high rate of left and mixed dominance. He visualized the child having difficulty with symbols because at one time he saw them with his left cerebral hemisphere and at other times with his right. Thus the child showed reversal of words and letters. To the situation of reading defect and lack of dominance he ascribed the term *strephosymbolia*.

Hallgren,<sup>3</sup> in 1950, completed a clinical and genetic study of 276 cases of reading defect in which, by his criteria, there was no demonstrable neurological disease. He

called this disorder specific dyslexia. Some of his conclusions are quoted as follows:

a) Specific dyslexia with a high degree of probability follows a mono-hybrid, autosomal dominant modal inheritance.

b) A rough estimation of the incidence of specific dyslexia in the normal population is about 10%.

c) There are grounds for assuming that environmental factors have had an adverse effect on the ability to read and write in some of the cases.

d) Calculations have failed to prove that there is a direct association between left-handedness and specific dyslexia. No grounds are found for assuming there is a relationship between left-eyedness or mixed eye and hand dominance and specific dyslexia.

More recently Pasamanick, Knobloch and co-workers have evolved a theory of "continuum of reproductive casualty".<sup>4,5</sup> They have hypothesized that many children have been subjected to intrauterine anoxic experiences that produce central nervous system casualties ranging from death of the embryo or fetus through cerebral palsy, epilepsy, mental deficiency, some learning disorders, and some behavior disorders. The significant gestational factors which were correlated with higher than normal rates of incidence of the above listed disorders include vaginal bleeding, toxemias of pregnancy, and premature birth. They have also evolved a clinical picture of "minimal cerebral damage".<sup>6</sup> This concept denotes children who have mild though demonstrable abnormal neurological signs at age ten months. These disappear and are not found at 18 to 24 months. These authors suggest that by the time these children reach school age the only demonstrable residuals of their minimal brain damage are higher than normal incidence of reading defects and behavioral problems. "Behavioral problems in children have been ascribed to tension in their mothers but the likelihood that an infant with minimal cerebral damage produces tension in his mother needs serious consideration."

They also found that the incidence of pregnancy disorders and prematurity in low socio-economic groups is much higher than in the middle and upper socio-economic groups. This, of course, raises questions of considerable public health concern.

Electroencephalographic studies have revealed non-specific dysrhythmias and "immature" patterns in 50-70% of cases.<sup>7</sup> The specificity of E.E.G. findings and reading defect is difficult to correlate, particularly in view of the non-specificity of abnormality.

### School-Centered Approach

To get very involved in this area would require entry into the controversy of the adequacy of present day schools. This is probably beyond the scope of this paper. It might seem appropriate, however, to observe that schools have not evolved well organized and coordinated remedial services. It does seem that intramural remedial teaching has considerable advantage over the private tutor and reading clinic.

Schools have attempted, by a variety of "tracking" and "at speed" curricula, to find a niche for the slow reader. Their efforts have not been attended with outstanding success, possibly because this technique does not get at the attendant emotional disorders.

Fabian has suggested that reading should not be taught until the child is seven years old.<sup>1</sup> While he has sound reasons for this, it does penalize the child who is ready to learn by six years of age.

It is apparent by now that mass educative techniques cannot cope with many learning problems. Add to this the overcrowded classroom, the sometimes minimally trained or emotionally disturbed teacher, and the child with a special problem or need will not be served.

### Child and Family Centered Approach

The literature in this area is voluminous. The majority of workers are strongly convinced that faulty child-parent relationships

and the emotional problems of the child that ensue are the most crucial factors in the formation of learning disorders of most kinds, particularly after one excludes the factors of mental deficiency and overt central nervous system disease. They stress the psychological conflicts arising when the child is confronted with the learning process. These conflicts are often couched in psychoanalytic terms such as reading being equilibrated with voyeuristic impulses, the anxiety that they produce, and the subsequent avoidance reaction of failing to learn to read.<sup>8</sup> Another formulation includes "the renunciation of the gratification of curiosity . . . modeled after the physiological process of ingestion of food."<sup>9</sup> Another formulation emphasizes that the "ego activity of reading may be restricted as a defense to escape painful situations, e.g. in avoiding competition."<sup>10</sup> Others stress the lack of ability in chronically negativistic and angry children to identify with teachers and assume a positive and participating attitude toward the learning process.<sup>11</sup>

Some of the work in this field is convincing and plausible. None of the work explains satisfactorily the high sex differential of boys over girls, the tendency towards reversals, rotation and difficulty with symbols which in themselves are normal phenomena in pre-school children, and the fact that many of these children have histories of mild brain damage.

Most workers, however, and the author included, are convinced of the high correlation of family and child psychopathology in cases of reading defect. I find it useful to divide the cases into those of the severely deprived child coming from grossly inadequate families or domiciliary care and the moderately disturbed child coming from adequate home or stable domiciliary arrangements.

The former would include children coming from families in which there are psychotic parents or parents with severe character disorders. They also would include children who have had death or divorce of parents

with fragmentation of the family, and foster children who have had frequent changes of homes. These children routinely present more severe personality and behavior problems as well as more severe learning defects. To add to the severity of these problems is the fact that their parents are often the least adequate to become more provident toward their children and sustain any remedial and guidance program. These are the children who will probably fail to be rehabilitated by any technique. They have been deprived and mismanaged from infancy or early childhood and their learning defect only represents a portion of their generalized, disordered personality progression. In addition, these are the types of families that will probably have a higher rate of pregnancy disorder, prematurity and resultant minimal brain syndromes, as outlined by Pasamanick. These children also are more apt to come from family settings where there is low emphasis on learning.

The second category represents the child who may eventually be helped to overcome his difficulties, both academic and personality. These children have parents who may cope very well with the more adequately performing siblings but may fail to evolve the patience and realistic demands necessary for their non-learning child. The child-parent struggle over learning may become the nucleus of manifold conflicts leading to a frustrated, fearful or aggressive child with multiple emotional and behavioral problems. These families also may contain the child whose learning disorder is primarily emotional but also contains the necessities for improvement. They represent the salvageable group: parents who can respond to guidance and children who can respond to remedial techniques after their conflicts with their parents are alleviated.

All workers interested in the areas of child and family relationship stress the urgency of early detection and remediation to avoid the secondary personality effects caused by failure in school. The chronic frustration caused by chronic failure must

be apparent to all. Compensatory behavior disorders are to be expected.

As one can see by now, there is no certitude in any one explanation of reading defect and its attendant behavior and personality disorders. In the face of this confusion Rabinovitch and co-workers<sup>12</sup> have suggested that a great number of children who can't read fall into three major groups:

1. Those in whom the reading difficulty is based on demonstrable brain damage and is associated with varying degrees of aphasia;

2. Cases of "primary reading retardation" presenting a basic defect in the capacity to integrate written material and to associate concepts with symbols. "A neurological deficit is suspected in these cases, a developmental discrepancy rather than a brain injury." We might add to this Pasamanick's hypotheses of reproductive casualty continuum and minimal brain damage.

3. Cases of "secondary reading retardation" as a result of personality, family, and educational neglect factors.

Criteria for differentiation between these groups are to be found in the areas of psychometric testing, achievement tests, psychiatric evaluation, neurological examination, and response to remedial reading.

## Treatment

The approach to the problem can never be a unilateral one. Schools can probably be the most crucial treatment factor by early case finding and by consistent and diligent remedial programs.

Physicians are in a position to call attention to the problem as they often have a better relationship with the parents than the schools. They can discern in five minutes with a Gray Oral Reading Test a rough idea of defect. The social role they occupy is often more effective than anything else to lead the parents into constructive steps.

Remedial teaching by itself will not be nearly as effective unless it is attended by organized attempts to remedy the disturbed home relationship and the child's personality problems. The schools are rarely able to

assume this responsibility unless they contain within their system trained mental hygiene personnel who are equipped to assess and define disturbed child-parent relationships. Child guidance clinics may be the only available resource for this phase of the problem.

Many children require neurologic assessment and some will require treatment with drugs to control motility and attention disorders.

At best these children will require the combined efforts of schools, mental hygiene personnel, neurologists, and general practitioners. With this number of professionals involved there must be someone to coordinate the whole process. Perhaps at this time the child guidance clinics emerge as the best possibility.

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#### Not True to Life

The inference is not justified that our scientifically trained and able doctors are not capable of critically evaluating the publications of new drugs. Doctor friends have told me that the intimate doctor-patient relationship has been damaged by such inferences from Washington and by articles like the one appearing recently in LIFE which urged patients to press their doctors to prescribe cheaper drugs. Most of you probably saw the LIFE article entitled "A Big Pill to Swallow" but did not see the later ad in LIFE or the letters to the editor pointing out numerous errors of fact in the original article, including the fact that the drug on which the article was centered retailed at an average price of only 11.3¢ and not 30¢ as LIFE had written.—*The Drug Industry—Robbers or Heroes?*: Alex Guerry, Jr., President, Brayten Pharmaceutical Company.

MACK I. SHANHOLTZ, M.D.  
*State Health Commissioner of Virginia*

## **Experiences with Fluorescent Microscopy in the Identification of Group A Beta Hemolytic Streptococci**

Fluorescent antibody methods\* for the rapid detection of conventional antigen-antibody reactions have gained widespread popularity as useful diagnostic tools by public health laboratories during the past several years. As purified labelled antibody solutions or conjugates become available from commercial sources and as equipment and training in its use is acquired, the fluorescent antibody methods will become of greater importance in the diagnosis of many diseases of public health interest. It is not uncommon now to find local and state public health laboratories using these methods for the identification of Group A beta hemolytic streptococci; gonococci; the negri body of rabies; and, the treponemal antibody of syphilis.

Late in 1960 the State Health Department laboratory in Richmond acquired through the Heart Disease Control Program, Public Health Service, a fluorescent microscope and training for a member of the staff specifically in its use for the identification of Group A beta hemolytic streptococci. The opportunity to participate in this program was offered to all State Health Departments. Each participating laboratory agreed to examine a series of duplicate throat swabs by the fluorescent antibody method and by conventional and cultural and precipitin methods for the detection and identification of Group A beta hemolytic streptococci.

Eight physicians who normally send a considerable number of throat swabs to the laboratory for diagnostic help were each asked to collect fifteen duplicate throat

swabs for this study by simultaneously impressing and rolling them over identical pharyngeal surfaces. Each of the physicians expressed a keen interest in the study and a willingness to cooperate by collecting and mailing the duplicate swabs to the laboratory.

One hundred and twenty duplicate pharyngeal swabs were examined during the first three months of 1961. Upon arrival at the laboratory the duplicate swabs were separated. One was used for conventional cultural methods and the other for fluorescent antibody methods.

The conventional method employed in this laboratory for the examination of throat swabs for diagnostic purposes consists of the inoculation of suitable media for the isolation of *Corynebacterium diphtheriae*, beta hemolytic streptococci, and coagulase positive *staphylococcus aureus* and in the preparation of a direct smear from the swab for microscopic examination for the presence of spirochetes and fusiform bacilli. In this study the swab used for the conventional method was finally placed in 1 ml. of Todd Hewitt broth for subsequent testing by fluorescent antibody methods.

The duplicate swab used exclusively for the fluorescent antibody method was placed immediately in 1 ml. of Todd Hewitt broth and incubated for 3 hours at 37°C. After incubation period a loopful of the Todd Hewitt broth culture was inoculated into melted and cooled neopeptone infusion agar with sheep's blood and a poured blood agar plate made. Sediment from the three-hour Todd Hewitt broth culture was used for the fluorescent antibody studies.

The following results were obtained on the 120 duplicate swabs submitted for this comparative study of conventional cultural and fluorescent antibody methods for the

\* Fluorescent antibody methods is referred to throughout this article as the F. A. Method.

detection of Group A beta hemolytic streptococci.

*Conventional culture method*

(C.C.M.)

Positive	40
Negative	80
Total	120

*Both Methods*

FA	CCM	Number
Positive	Positive	37
Negative	Negative	75
Positive	Negative	5
Negative	Positive	3
		120

Three additional beta hemolytic streptococci cultures were isolated by cultural procedures. Two were identified as Group B and one as Group G by precipitin tests.

At the conclusion of this comparative study on April 1, 1961, a decision was made to continue the use of the F.A. Method in conjunction with the conventional method as previously described on all diagnostic throat swabs received by the laboratory. Forty-four of the 168 swabs tested yielded beta hemolytic streptococci by the conventional cultural method. Forty-two were confirmed as Group A beta hemolytic streptococci; 32 by the F.A. Method and ten by the precipitin test. One culture was identified as a member of Group B and another as Group G streptococcus.

The comparison of the two methods, conventional cultural and F.A. on these two series of throat swabs led to the conclusion that it would be advantageous to continue to use conventional cultural methods for the isolation of beta hemolytic streptococci from throat swabs submitted to the laboratory by physicians for general diagnostic purposes. The isolates from either the pour or streak blood agar plates would be grouped by the F.A. Method and by precipitin tests when necessary.

During the fourteen month period from January 1, 1961, to March 1, 1962, the lab-

oratory examined 3,383 throat swabs for general diagnostic purposes; 811 or 23.9% were positive for beta hemolytic streptococci by conventional cultural methods. Two hundred and fifty-seven of the 811 cultures were not grouped because the F.A. Method had not been adapted to routine procedures at the time they were isolated or because they were reported on holidays or on weekends. Five hundred and twenty-three or 94.4% of the remaining 554 cultures were verified as Group A streptococci by the F.A. Method. Thirty-one or 5.6% of the 554 cultures could not be placed in Group A by the F.A. Method. They were grouped as follows by the Lancefield precipitin procedure: Group A, 1; Group B, 11; Group C, 5; Group D, 3; Group G, 8; Group F, 1; and two cultures could not be grouped.

The three laboratories operated by the State Health Department located in Abingdon, Luray, and Richmond have cultured throat swabs for beta hemolytic streptococci for a number of years. They examined 5,963 throat swabs in 1961 and found 1,536 or 25% positive for beta hemolytic streptococci.

Results of the conventional cultural method for beta hemolytic streptococci may be reported within 24 hours after arrival of the throat swab in the laboratory. Sheep's blood should be used in the blood agar medium. Both pour plates and streak plates should be made from freshly prepared media.

Results of the F.A. Method for Group A beta hemolytic streptococci can be reported in five to eight hours after arrival of the throat swab in the laboratory. Experienced workers can examine from 15 to 20 swabs a day for F.A. Method.

The F.A. Method is now used in the laboratory as a means of grouping beta hemolytic streptococci by conventional method. Should an epidemic of streptococcal infections occur, the F.A. Method will be employed directly and in conjunction with conventional cultural methods.

## The Need for Active Immunization Against Tetanus

ONE OF THE PARADOXES in the practice of medicine is the confused thinking and differences of opinion that frequently arise when more is learned about a given problem. To throw light on a previously obscure subject does not necessarily illuminate the topic evenly; sometimes it casts fresh shadows that add to the obscurity, rather than lessen it.

The present therapy of cancer of the breast is an example of this. An equally confusing situation has arisen concerning the prevention of tetanus. A few years ago prophylaxis against tetanus seemed relatively simple. Careful local debridement, plus the injection of 1500 units of tetanus antitoxin was considered adequate treatment for the majority of injuries that occurred in civil life. It was easy to remember.

The introduction of active immunization, with tetanus toxoid, about twenty-five years ago and the more recent availability of the various antibiotics have greatly simplified the prevention of this condition but they have also thoroughly confused many physicians. Especially is this true in the case of physicians with limited experience in traumatic surgery.

The question frequently arises as to whether the patient has been actively immunized. Assuming this has been done, the physician may be uncertain as to whether a booster injection of tetanus toxoid will elicit an adequate response in time to prevent the onset of tetanus. The work of Stafford, and others, has demonstrated that the recall from toxoid injections received as long ago as World War II, is almost immediate but this is not general knowledge.

Another misconception frequently encountered is that some degree of immediate protection is provided by the first injection of tetanus toxoid. This has led to the mistaken substitution of toxoid for antitoxin as a post-traumatic measure in patients who have not been actively immunized. Tetanus toxoid, of course, offers no protection under these conditions.

In a non-immunized patient who is not sensitive to tetanus antitoxin, the recommended dose is 3,000 units instead of the traditional 1500 units of antitoxin. In addition to this, it is doubtless wise to begin an immediate series of tetanus toxoid injections in all non-immunized individuals following an accident in which antitoxin is required. This offers no immediate protection but it avoids the possibility of having to give antitoxin,

if the patient receives another injury at a later date. The danger of sensitivity developing between injuries is a very real one and the patient should be spared this possibility by prophylactic immunization during the interim.

The problem frequently arises as to what should be done when a questionably positive skin reaction results from an intradermal test dose of antitoxin. It is often desirable to use one of the penicillin preparations or preferably a broad spectrum antibiotic in lieu of tetanus antitoxin in such situations but each case must be individualized in terms of the severity of the local reaction and the need for specific antitetanic protection.

These and many other questions now arise daily concerning the prevention of tetanus. The answers can be simplified in only one way and that is by the adoption of widespread active immunization of the general population by tetanus toxoid injections. The majority of children and young adults, who have been treated by alert practitioners and pediatricians during the past two decades, have been actively immunized. Veterans of World War II, and all who have seen subsequent military service, have received this protection. This is one of the seldomly appreciated fringe benefits from having served in the military. During the past few years the medical directors of many large corporations have provided this service for all employees whose work exposes them to the hazard of industrial injuries.

Despite this encouraging beginning, there are millions of non-immunized Americans engaged in activities which make them especially liable to injury. A nation-wide educational campaign should be carried out to remedy this situation. We have national foundations to promote research and disseminate information about many acute and chronic diseases but no effective effort has been made to promote widespread immunization against tetanus. The need is evident but the lack of glamour and the simplicity of the remedy has served perhaps as a deterrent. Potential sponsors may feel that there is not sufficient challenge to warrant their support. The story may be too simple. Whatever the cause of the current neglect, there is an outstanding need for nation-wide educational work in this underdeveloped but rewarding field.

HARRY J. WARTHEN, M.D.

## *Society Activities . . .*

### **Ophthalmologists Organize.**

The ophthalmologists of Northern Virginia, representing Falls Church, Arlington, Fairfax, and Alexandria, have formally created the Northern Virginia Academy of Ophthalmology, becoming the first such group in the State. Dr. Thomas E. Haggerty, Falls Church, is president; Dr. Albert Long, Alexandria, vice-president; and Dr. M. Mendel Bocknek, Falls Church, secretary-treasurer.

### **Joint Meeting.**

The Accomack County Medical Society and the Northampton County Medical Society met in joint session on April 18th. Guest speaker for the meeting was Dr. Allen Guttmacher of New York City. He is director of obstetrics and gynecology at Mt. Sinai Hospital and is clinical professor at Columbia Medical School. He is the winner of the 1947 Lasker Award of the Planned Parenthood Federation of America and is president-elect of the organization. Dr. Guttmacher spoke on The Pressure of World Population—a Medical and Social Challenge.

### **The Virginia Surgical Society**

Held a joint meeting with the North Carolina Surgical Association at The Homestead, Hot Springs, April 13-14, under the presidencies of Dr. William R. Hill, Richmond, and Dr. Richard T. Myers, Winston-Salem. The guest speaker for this meeting was Dr. H. William Scott, Jr., professor of surgery of Vanderbilt University School of Medicine. He, along with members of the two groups, took part in two symposiums—one on peptic ulcer and one on occlusive arterial disease.

Dr. Hugh H. Trout, Jr., Roanoke, was elected president of the Virginia Society; Dr. Arthur Smith, Charlottesville, vice-president; Dr. Carrington Williams, Jr., Richmond, re-elected secretary; and Dr. Meredith Aldrich, Charlottesville, re-elected treasurer.

### **Fourth District Medical Society.**

The annual meeting of this Society was held in conjunction with the Spring Institute of the Southside Community Hospital, Farmville, on April 3rd, under the presidency of Dr. A. Epes Harris, Jr., Blackstone. Guest speakers for this meeting were Dr. Ernest Craige, associate professor of medicine at the School of Medicine, University of North Carolina, and chief of cardiology; and Dr. T. Franklin Williams, also of the staff of the University. Dr. Craige spoke on Problems of Some Coronary Artery Diseases and Dr. Williams on Use of Diuretics in Congestive Failure, Hypertension and Cor Pulmonale.

Following dinner, Mr. Richard Nelson, representative of the American Medical Association, spoke on Medico-Political Problems on National and State Levels with special reference to Kerr-Mills Legislation vs King-Anderson Bills.

### **The Southern Medical Association**

Will hold its annual meeting, November 12-15, at the Fontainbleau Hotel, Miami Beach. Exhibits are being solicited for the scientific section and applications may be obtained from the chairman, Dr. George G. Schmitt, 30 S. E. 8th Street, Miami, Florida.

# *Current Currents*

KING-ANDERSON: As this issue goes to press, the battle over H. R. 4222 is entering what might well be its final phase. It is entirely possible, therefore, that by the time this is read, a vote will have been taken by the House Ways and Means Committee on whether to report the bill. The way things look at the moment, any such vote will be as close as the proverbial hair.

One thing that is certain, however, is that the battle over H. R. 4222 is one of the most bitter of recent years. In the words of Rep. Don L. Short (R., N.D.), it has become "downright vicious". Congressman Short appealed for continued trial of the Kerr-Mills program and stated:

"The distortions, untruths and half-truths that are making their rounds and being promulgated by various organizations in this country are astounding. In addition to that, it is actually libelous in many respects. Our fine physicians and dentists in this country are being portrayed as evil, money-grabbing monsters. Our medical associations are being portrayed in the same way. Nothing is ever said about the many sacrifices and the dedicated work of many physicians, dentists and surgeons, and anyone who undertakes to defend these men and women and the organization representing them is immediately suspect."

Word from Washington is that Secretary of HEW Ribicoff is "grimly determined to beat AMA in this struggle". Now under fire for releasing an HEW publication on "The Health Care of the Aged", Ribicoff is sparing no effort to bring the King-Anderson bill to a vote.

In other developments, the newly organized Physicians' Committee for Health Care of the Aged Through Social Security, headed by Dr. Esselstyn, has opened a fund raising drive. At the same time, the National Council of Senior Citizens, headed by ex-congressman Aime Forand, began to distribute mail stickers promoting the social security approach.

Where will it all end? Right now, it is anyone's guess. In the meantime, physicians should keep talking and writing. The last great effort is the one that most often wins.

CONGRESSIONAL LUNCHEON: For the third successive year, members of the Council of The Medical Society of Virginia have met with Virginia's Congressional delegation. The meeting was held in Washington on May 15 and everyone came away with the feeling that Virginia is fortunate to boast such able representatives. These meetings have proven to be invaluable in bringing about a better understanding of medicine's viewpoints by those in Congress, while at the same time enabling Council to better appreciate the problems and responsibilities of our lawmakers.

PROFESSIONAL LIABILITY INSURANCE: A study of professional liability insurance, recently conducted by the California Medical Association and the California Hospital Association, is of the greatest interest to all physicians. The study report begins: "To be sued for malpractice and have a verdict returned against him is most unpleasant for a physician. But it can be doubly distressing if the physician carries no professional liability insurance or the limits of his liability are insufficient to cover the amount of the jury's award. Interviews with such physicians, their professional colleagues, their patients, their insurance counselors, and their attorneys reveal that all too frequently physicians fail to carry either any or sufficient professional liability insurance."

In conclusion, the reports states: "A survey to ascertain the extent of malpractice coverage of doctors on the staff of two large Los Angeles hospitals revealed there are physicians and surgeons who carry no liability insurance whatsoever. Furthermore, about 10 per cent of the doctors in the surgical specialties and twice as many in medicine and general practice, are carrying limits of insurance in the amount of \$50,000 or less. Doctors in the younger and older age groups tend to carry less liability insurance than those in the intermediate age bracket. Adequate malpractice insurance coverage for each doctor is necessary to protect his estate, his patients, and the physicians with whom he works."

It is interesting to note that the California Medical Association believes that a minimum coverage of \$100,000 should be carried by all physicians.

PHYSICAL REJECTIONS CLARIFIED: The Washington Report on the Medical Sciences states that a recent release by the Army Surgeon General's Office paints a brighter picture of American youth—as far as physical fitness is concerned. The release states that medical reasons were responsible for only one-half of the draftee rejections between the end of the Korean war in 1953 and June, 1960. Sixty-eight per cent of those called up qualified for military duty. Of those found disqualified, the physical rejects were no more numerous than those who failed mental tests or who were unacceptable for "administrative" reasons (alcoholism, morals, etc.).

SURPLUS DISTRIBUTIONS: Another bit of information from the Washington Report on the Medical Sciences reveals that during the first quarter of 1962 the Department of HEW distributed among the states Federal surplus property whose acquisition cost was \$91,234,143. Ultimate recipients were public health, medical, educational and civil defense institutions. Eighty per cent consisted of hospital furniture, surgical equipment, laboratory devices and other personal property. The remainder was real estate.

DID YOU KNOW? Americans consume annually about 35,000,000 pounds of snuff and 33,000,000 pounds of scrap chewing tobacco.

# News . . .

## **New Members.**

The following members were admitted into The Medical Society of Virginia during the month of April:

Bruce Allenby Baber, M.D., Wytheville  
Edward M. Bowles, Jr., M.D., Covington  
Edward K. Davis, M.D., Charlottesville  
Walter Draper, M.D., Richmond  
Ernest Conrad Hermann, M.D.,  
Richmond  
William Farlow Maloney, M.D.,  
Richmond  
John Baggerly Myers, M.D.,  
South Norfolk  
Frederick John Spencer, M.D.,  
Fredericksburg  
Alice Virginia Thorpe, M.D., Richmond  
Michael Vassallo, M.D., Annandale

## **Dr. John R. Saunders,**

Richmond, has been elected a vice president of the American Psychiatric Association. The annual meeting of this Association was held in Toronto in April.

## **Board of Medical Examiners.**

The summer examinations will be given by the Virginia Board of Medical Examiners at the John Marshall Hotel, Richmond, in two sessions. The first will be June 6-9, and the second June 12-15. These two sessions are made necessary by the large number of applicants who will be examined. The annual meeting of the Board will be held on June 11th. The Reciprocity Committee will interview applicants beginning at 8:00 A.M. on the 11th.

## **Dr. Bruce Thomas Garratt**

Has been named director of the Fredericksburg Health District, which includes Fredericksburg and the counties of King George, Spotsylvania and Stafford. Dr. Garratt has been in private practice in Suffolk.

## **Dr. Henry B. Mulholland**

Has been named recipient of the annual Thomas Jefferson Award. The Award which carries a cash prize of \$500 is made by the Thomas Jefferson Memorial Foundation to a member of the faculty or administration of the University of Virginia who has brought the greatest honor to the institution through his work.

## **Dr. Robert V. Terrell,**

Richmond, has been elected a vice president of the American Proctologic Society. The annual meeting was held in Miami in May.

## **Selective Service Deferment of Residents and Interns**

Recent discussions with the National Advisory Committee on the Selection of Physicians, Dentists and Allied Specialists have clarified several issues arising from the recently accelerated program of drafting interns and residents into military service. There is no basic change or new administrative regulation concerning the method of drafting physicians. Selective Service officials, although aware of the educational value of hospital residency programs, are finding it necessary to use the draft mechanism to bring into the armed services the number of physicians now needed.

Defense Department as well as Selective Service officials advise that if each draft-age doctor keeps his local Selective Service board informed of his residency status, and if each hospital administrator keeps fully informed of the military classification of his house officers, the draft problem can be greatly alleviated. Selective Service officials plan to publish specific bulletins to provide doctors and hospitals with all necessary current information about the accelerated draft.

Meanwhile, there are a number of steps which both residency candidates and hos-

pitals could and should take to avoid unnecessary disruption of training programs:

1. Prospective residents will be automatically classified 1-A upon completion of internship. It is essential that the prospective resident notify the proper Area Board about his appointment. The proper Area Board is that which has jurisdiction over the locale of the hospital to which he is appointed. Selective Service officials emphasize that such notification of the Area Board in no way will reflect on the resident's status with his own local board. If the prospective resident waits until he receives a 1-A classification notice from his local board, he has only ten days in which to make an appeal. Failure to appeal within the ten-day period will nullify his right to appeal.
2. Hospitals should ask all candidates for residency positions to furnish their Selective Service numbers, their draft classifications, and the addresses of their local boards. Selective Service officials recommend that the hospital notify the respective local boards of the effective dates of each resident's appointment. This notification is not an appeal, but it informs local boards of facts which may help in making a judgment on a draft candidate's change of status. An appeal from a draft status should be directed to the Area Board. The appointing hospital may, of course, support the prospective resident's appeal by letters to the Area Board.
3. Because the present national emergency is likely to be of extended duration, Selective Service officials urge hospitals to consider carefully the draft status of each prospective resident. It is recommended that, to the extent feasible, a hospital appoint draft-exempt candidates in sufficient proportion so that continuity of its residency program may be maintained.

## The Use of Live, Oral, Poliovirus Vaccine

Complete immunization with the three types of live, oral, poliovirus vaccine has become possible with the licensing of Type III vaccine. In order to formulate a policy allowing its most beneficial use, a meeting of the Public Health Advisory Committee of The Medical Society of Virginia and representatives of the Virginia State Department of Health was held. The following recommendations were made by this group:

1. Although it is recognized that mass immunization is the best way to administer the vaccine, the use of oral poliovirus vaccine by Public Health Agencies should be restricted during the summer of 1962 to those areas in which an epidemic appears to be developing. Prompt reporting is vital if adequate surveillance is to be maintained.

*Reasons:* a. Twelve weeks must elapse between the first and third doses of the vaccine. It is therefore most improbable that any large scale program could be completed before the fall of 1962.

b. Many persons are on vacation during the summer months. As it is desirable to immunize the whole community completely—i.e., with all three types of vaccine—this could not be accomplished.

c. There is an increase of natural "wild" enteroviruses (polio, Coxsackie, ECHO) during the summer. It has been shown conclusively that these "wild" viruses interfere in the bowel with the immunizing capacity of the attenuated poliovirus in the vaccine.

2. Mass immunization through public clinics subsequent to the summer of 1962 should be reserved for those selected segments of the population known to have responded poorly to Salk vaccine programs. At the same time, coverage of the remainder of the community should be achieved in the offices of private physicians.

*Reasons:* a. Because many people have now been completely immunized with Salk vaccine, it would be a misuse of public funds

to promote wholesale immunization of communities. Community effort should be directed to those whose age renders them most susceptible to poliomyelitis (children, particularly the preschoolers) in certain ethnic and socio-economic groups with low immune status (the lower income and colored).

3. Use of the Salk vaccine should be continued energetically.

*Reasons:* a. It is known that the Salk vaccine confers immunity in 75-90% of those to whom it is administered. It is thus a potent weapon in the fight against poliomyelitis and should be used extensively until community vaccination with the oral vaccine is implemented.

THE GROUP WAS UNANIMOUS IN ITS OPINION THAT ORAL VACCINE BE USED IN THE STATE OF VIRGINIA BY PRIVATE OR PUBLIC HEALTH PHYSICIANS ONLY AFTER THE CRITERIA CITED IN THE ABOVE RECOMMENDATIONS ARE MET.

MACK I. SHANHOLTZ, M.D.,  
*Commissioner*  
State Department of Health

WILLIAM GROSSMANN, M.D., *Chairman*  
Liaison Committee to State Department  
of Health

The Committee on Child Health of The Medical Society of Virginia is in substantial agreement with the above statement. In its meeting of April 24, the committee adopted the following resolution:

WHEREAS: The Sabin oral vaccine represents further progress in the prevention of polio; and

WHEREAS: The Salk vaccine has been successful in reducing the incidence of the disease and should continue to be used in immunization schedules for infants and children; and

WHEREAS: The Sabin oral vaccine, while an important adjunct, is currently in short supply;

THEREFORE BE IT RESOLVED: That the Sabin vaccine be used (a) in those areas where polio epidemics are recognized by local physicians and the Department of Health and (b) in those areas where Salk vaccine has not been utilized effectively.

#### For Sale

Well established general practice and office equipment in Roanoke. Practice grossing over \$30,000 per year. Terms, no money down, monthly payments over two years period. Leaving July 1st for resident training. If interested, write P. O. Box 5053, Roanoke, Virginia. (*Adv.*)

## Obituaries . . .

### **Dr. Lee Spottswood Liggan,**

Prominent physician of Irvington, died April 28th, at the age of sixty-six. He graduated from the Medical College of Virginia in 1923 and served as associate professor at the College for sometime. Dr. Liggan practiced in Richmond before going to Irvington in 1934. He received the Distinguished Service Medal for his services in World War II, serving on the Selective Service Board and the Medical Advisory Board. Dr. Liggan was active in medical and civic affairs in his community and was a past president of the Irvington-Kilmarnock-White Stone Rotary Club. He had been a member of The Medical Society of Virginia for eighteen years.

His wife and a son survive him. Mrs. Liggan is a past president of the Woman's Auxiliary to The Medical Society of Virginia.

### **Dr. Jerome Nathaniel Baum,**

Alexandria, died in his office following a heart attack on March 29th. He was forty-six years of age and a graduate of the Hahnemann Medical College in 1941. Dr. Baum served in the Army Air Corps Medical Service, with the rank of Lieutenant Colonel, during World War II, following which he began his practice in Alexandria. He was a medical consultant on aero space medicine for Melpar, Incorporated. Dr. Baum was a member of The Medical Society of Virginia, having joined in 1947.

His wife and two daughters survive him.

### **Dr. Hugh Ross Fraser,**

Smithfield, died April 6th, at the age of forty-two. He received his medical education at the University of Edinburgh, Scotland, graduating in 1951, and served his internship at Riverside Hospital in Newport News. Dr. Fraser had been a member of The Medical Society of Virginia since 1954.

His mother, two children and a brother survive him.

### **Dr. Wilkins.**

The Lynchburg Academy of Medicine, Inc. of which Dr. James A. Wilkins was a long and honored member, desires to place on record this testimony of esteem and tribute to his memory.

WHEREAS, that in the passing of this honored physician, the Lynchburg Academy and the Community lost a valuable citizen. He practiced in Lynchburg for many years, and was school physician and coroner. During his time of practice he was highly esteemed by his fellow practitioners and greatly loved by his patients.

The members of your committee remember this kindly gentleman and physician in making his rounds among his patients as an example of that fine school of physicians.

That in his death we have lost a valuable member, and it is our desire to spread a copy of these resolutions on the minutes of our Society, and that a copy be sent to his family and to the Virginia Medical Monthly.

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references: 1. Prueter, G. W.: Applied Therapeutics 3:351, 1961. 2. Taylor, F. A.: West J. Surg., Obstet. & Gynec. 64:280, 1956. 3. Ainslie, W. H.: Obstet. & Gynec. 13:185, 1959. 4. Pearse, H. A., and Trisler, J. D.: Clin. Med. 4:1081, 1957.

\*menorrhagia

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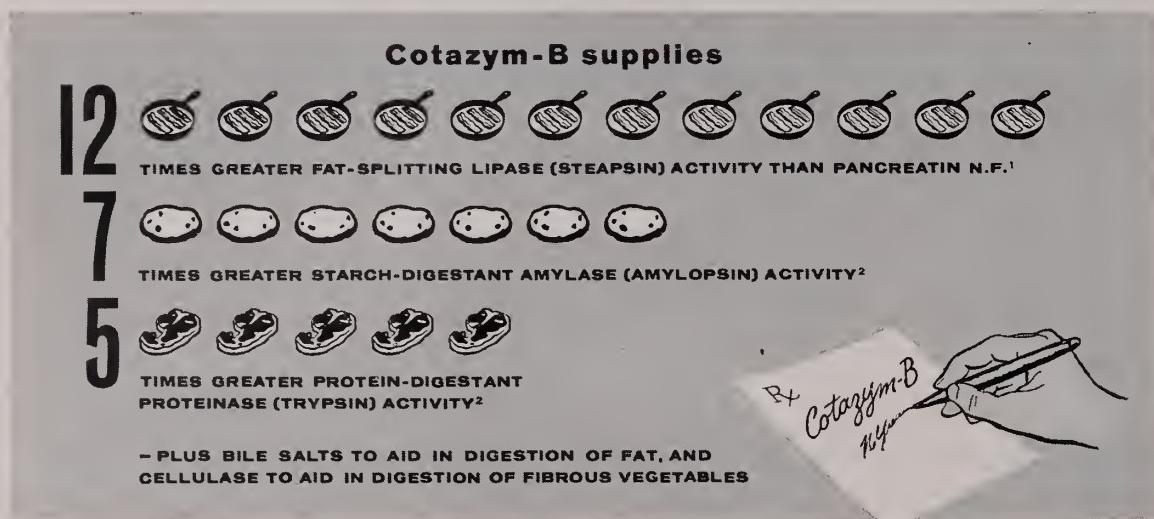
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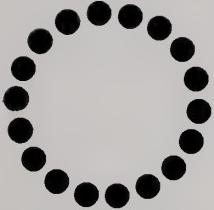
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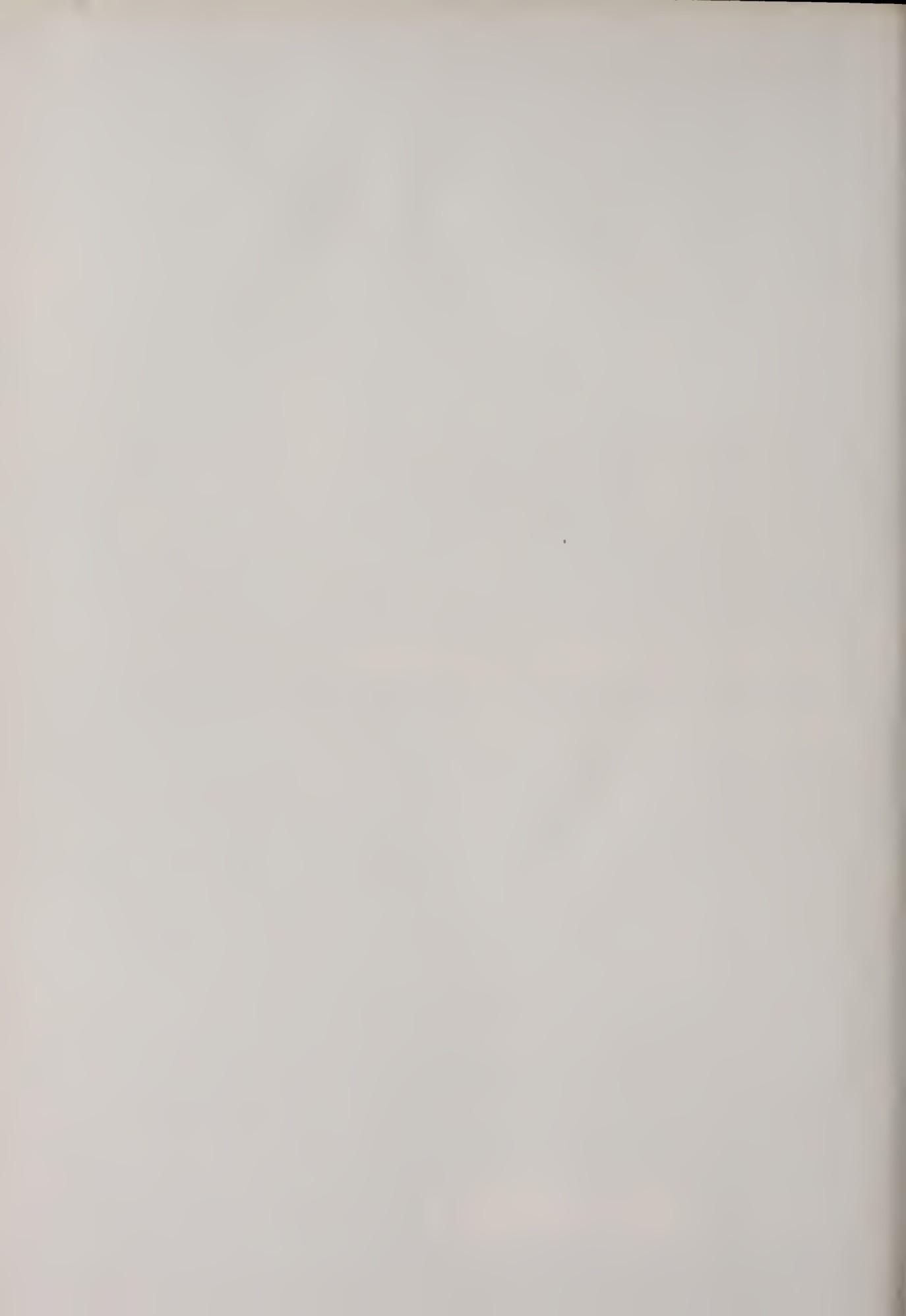
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